Mini System

FW-M777/21/22

Service
Service
Service

Service Manual

COMPACT disc DIGITAL AUDIO

TABLE OF CONTENTS

	Page
Location of pc boards & Version variations	1-2
Technical Specifications	1-3
Measurement setup	1-4
Service Aids, Safety Instruction, etc.	1-5
Disassembly Instructions & Service positions	2
Service Test Programs	3
Set Block diagram	4-1
Set Wiring diagram	4-2
Front Control Board	5
Front Display Board	6
ECO6 Tuner Board : Systems Non-Cenelec	7A
Systems Cenelec	7B
AF11 Board	8
P2003 135/165W Module	9
5DTC Module (MP3 Version)	10
Set Mechanical Exploded view & parts list	11
Revision List	12

CLASS 1
LASER PRODUCT

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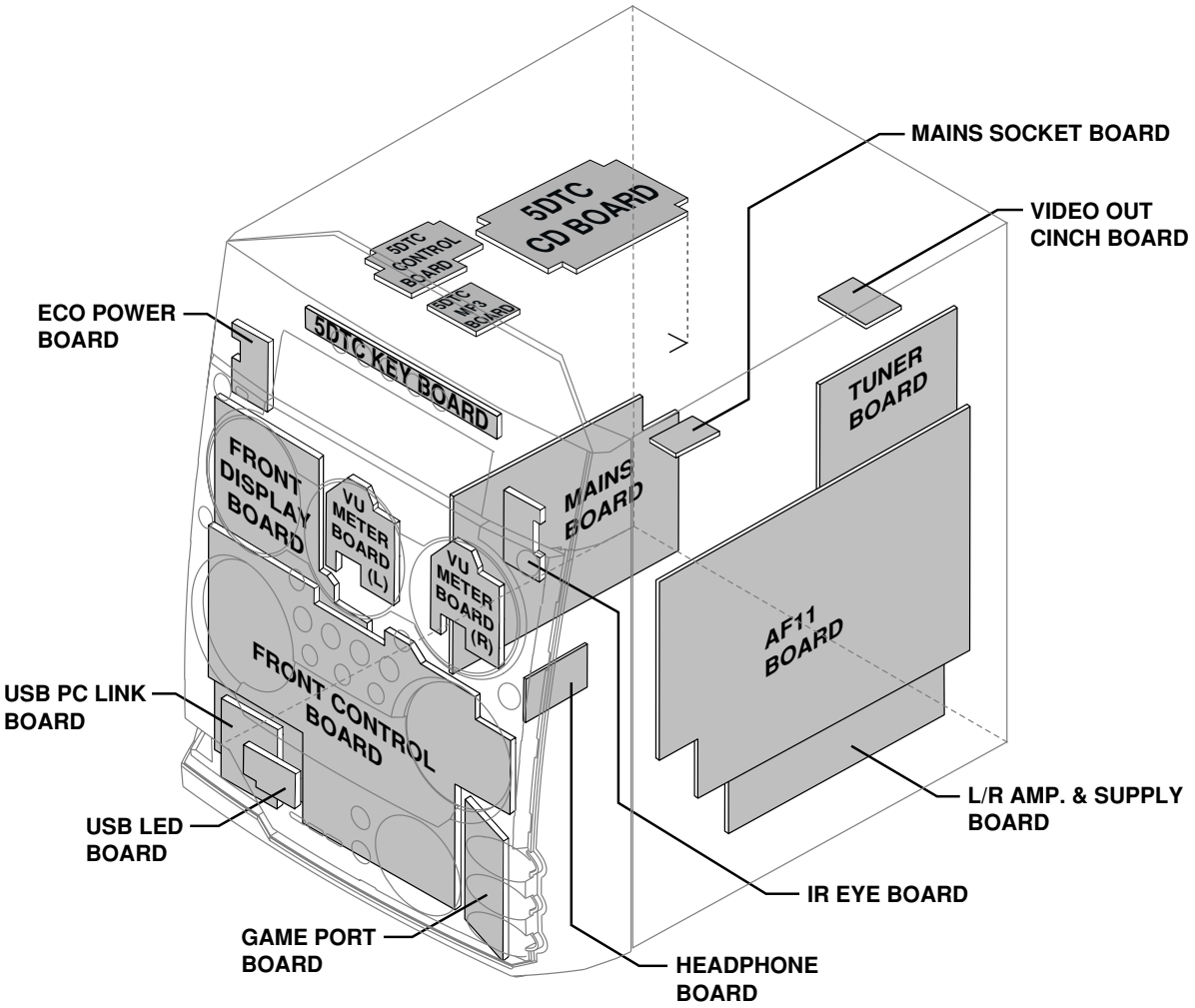
Version 1.2

PHILIPS

LOCATION OF PRINTED CIRCUIT BOARDS



VERSION VARIATIONS:

Type /Versions: / Features & Board in used:	FW-M777									
	/21	/22								
Aux in / CDR in	x	x								
Line Out	x	x								
Video Out	x	x								
Surround Out										
Subwoofer Out										
Power Booster Out										
Digital Out										
Digital in										
Matrix Surround										
RDS		x								
Dolby Pro Logic (DPL)										
Incredible Surround	x	x								
Karaoke Features										
Voltage Selector	x									
ECO Power Standby (Clock Display Off)	x	x								
ECO6 Tuner Board - Systems Non-Cenelec	x									
ECO6 Tuner Board - Systems Cenelec		x								
USB PC LINK	x	x								
Game Port (Video / Audio L / Audio R)	x	x								

SPECIFICATIONS

GENERAL:

Mains voltage : 110-127V/220-240V Switchable for /21/21M
120V for /37
220V for /33
220-230V for /22/34
230-240V for /30
Mains frequency : 50/60Hz
Power consumption : < 1W at ECO Power Standby
: < 25W at Standby (DEMO mode off)
: 175W at Active
Clock accuracy : < 4 seconds per day
Dimension centre unit : 265 x 322 x 390mm

TUNER:

FM

Tuning range : 87.5-108MHz
Grid : 50kHz
100kHz for /37
IF frequency : 10.7MHz ± 25kHz
Aerial input : 75 ohm coaxial
300 ohm click fit for /37
Sensitivity at 26dB S/N : < 7uV
Selectivity at 600kHz bandwidth : > 25dB
Image rejection : > 25dB [> 75dB]
Distortion at RF=1mV, dev. 75kHz : < 3%
-3dB Limiting point : < 8uV
Crosstalk at RF=1mV, dev. 40kHz : > 18dB

MW

Tuning range : 531-1602kHz
530-1700kHz for /21/21M/37
Grid : 9kHz
10kHz for /21/21M/37
IF frequency : 450kHz ± 1kHz
Aerial input : Frame aerial
Sensitivity at 26dB S/N : < 4.0mV/M
Selectivity at 18kHz bandwidth : > 18dB
IF rejection : > 45dB
Image rejection : > 28dB
Distortion at RF=50mV, M=80% : < 5%

AMPLIFIER:

Output power (6 ohm, 1kHz, 10% THD)
L & R : 2 x 165W RMS

Frequency response within -3dB : 50Hz-16kHz
Incredible Surround : On / Off
Game Sound : Speed /Punch /Blast /Off
WOOX : Level 1, 2, 3 & Off
Digital Sound Control (DSC) : Jazz /Rock /Pop /Optimal
Virtual Ambience Control (VAC) : Cyber / Arcade / Hall / Cinema / Concert

Input sensitivity
Aux in (at 1kHz) : 640mV ± 2dB
Game Port (at 1kHz) : 310mV ± 2dB
USB (at 1kHz) : 830mV at 600 ohm

Output sensitivity
Line out (Left/Right) : 450mV ± 2dB at 22 kohm
Headphone output at 32 ohm : 700mV ± 2dB (Max. vol.)

5DTC:

Measurement done directly at the connector on the board.
Output Resistance : < 100 ohm
Output Voltage (0dB, 1kHz) : 0.5Vrms ± 1dB (unloaded)
Channel Unbalance : < ±1dB
Channel Separation (1kHz) : > 60dB
Frequency Response (±3dB) : 20Hz-20kHz
Signal to Noise Ratio : > 76dBA
MP3-CD Bit Rate : 32-256 kbps
Sampling Frequencies : 32, 44.1, 48 kHz

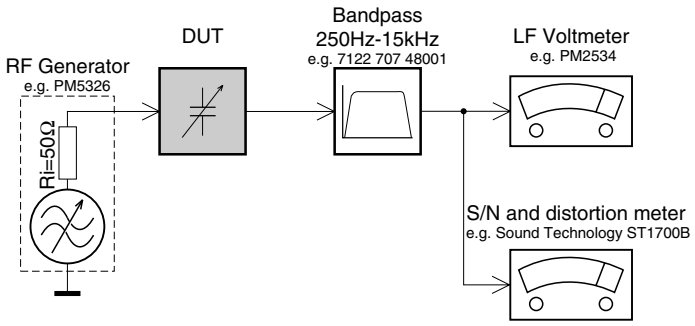
USB:

Measurement done directly at the connector on the board.
Output Impedance (1 kHz) : < 1.5 kohm
Output Voltage (0dB, 1kHz) : 830mVrms ± 1.5dB
Channel Unbalance : < ±1dB
Distortion THD (0dB, 1kHz) : < 0.3%
Channel Separation (1kHz) : > 40dB
Frequency Response (±3dB) : 20Hz-20kHz
Signal to Noise Ratio : > 75dBA

[....] Values indicated are for "ECO6 Cenelec Board" only.

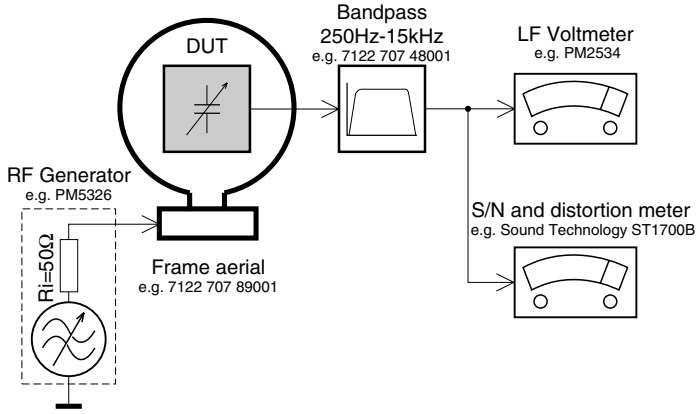
MEASUREMENT SETUP

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilottone (19kHz, 38kHz).

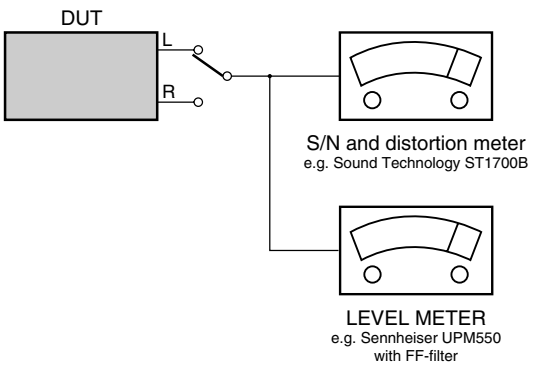
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

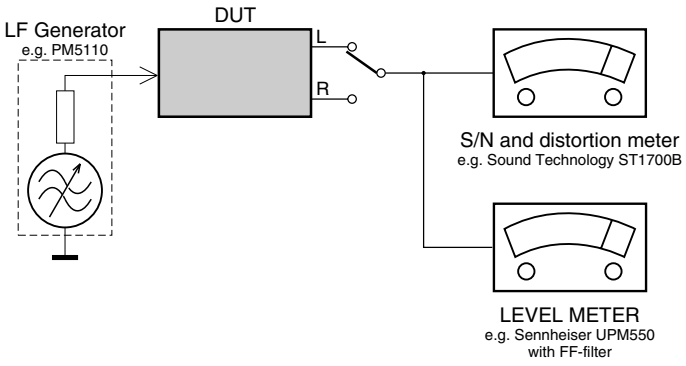
CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)



Recorder

Use Universal Test Cassette **CrO2** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071



SERVICE AIDS

Service Tools:

Universal Torx driver holder 4822 395 91019
Torx bit T10 150mm 4822 395 50456
Torx driver set T6 - T20 ..... 4822 395 50145
Torx driver T10 extended 4822 395 50423

Cassette:

SBC419 Test cassette CrO2 ..... 4822 397 30069
SBC420 Test cassette Fe 4822 397 30071
MTT150 Dolby level 200nWb/M 4822 397 30271

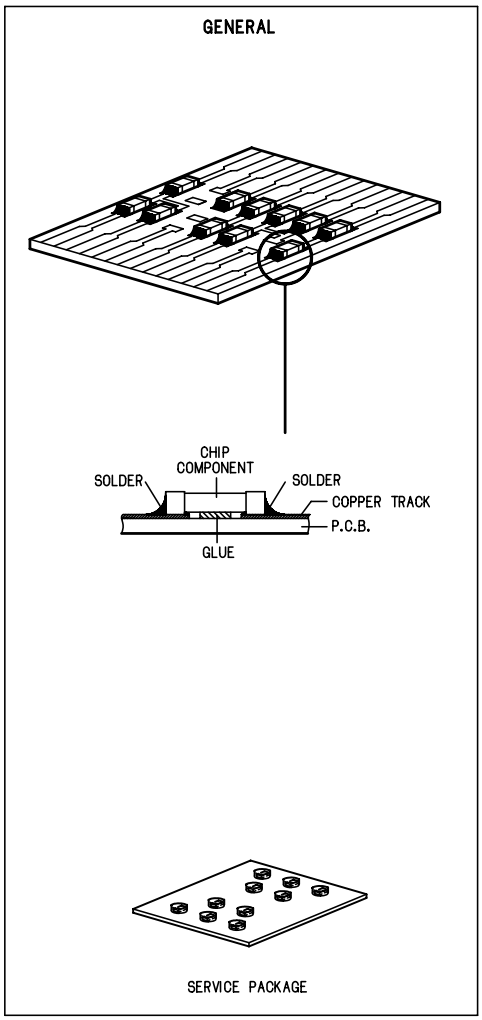
Compact Disc:

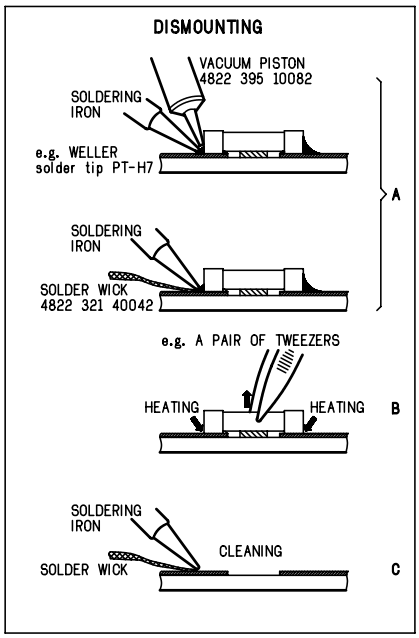
SBC426/426A Test disc 5 + 5A 4822 397 30096
SBC442 Audio Burn-in Test disc 1kHz 4822 397 30155
SBC429 Audio Signals disc 4822 397 30184
Dolby Pro-logic Test Disc 4822 395 10216

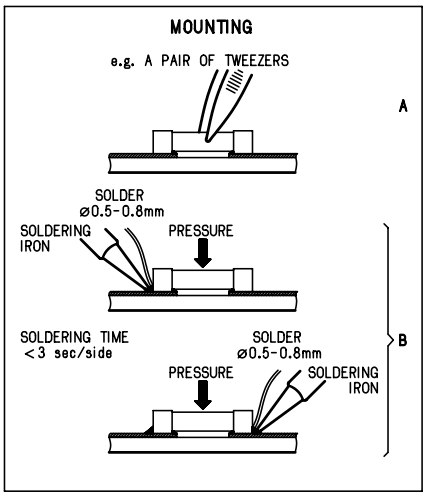
ESD Equipment:

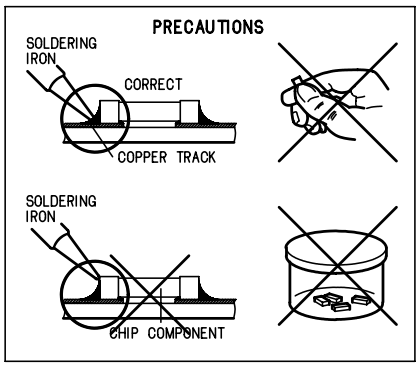
Anti-static table mat - large 1200x650x1.25mm ... 4822 466 10953
Anti-static table mat - small 600x650x1.25mm 4822 466 10958
Anti-static wristband 4822 395 10223
Connector box (1MΩ) 4822 320 11307
Extension cable
(to connect wristband to conn. box) 4822 320 11305
Connecting cable
(to connect table mat to conn. box) 4822 320 11306
Earth cable (to connect product to mat or box) 4822 320 11308
Complete kit ESD3
(combining all above products) 4822 320 10671
Wristband tester 4822 344 13999

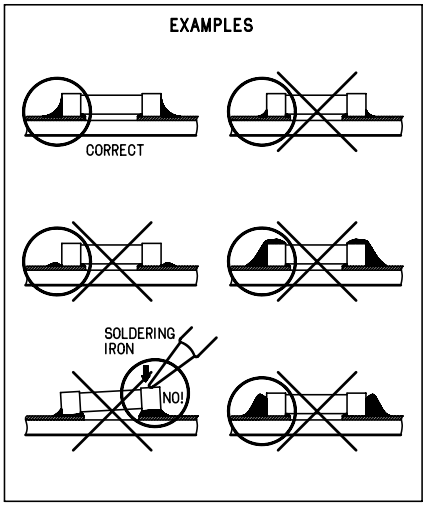
HANDLING CHIP COMPONENTS











(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used

Safety components are marked by the symbol ⚠ .

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

De Veiligheidsonderdelen zijn aangeduid met het symbool ⚠

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.

Less composants de sécurité sont marqués ⚠

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

Sicherheitsbauteile sind durch das Symbol ⚠ markiert.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

Componenty di sicurezza sono marcati con ⚠

(GB)

After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA.

CLASS 1
LASER PRODUCT

(GB) Warning !

Invisible laser radiation when open.
Avoid direct exposure to beam.

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarse !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

(F)

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

DISMANTLING INSTRUCTIONS

Dismantling of the 5DTC Module

1) Loosen 4 screws to remove the Cover Top (pos 255) by sliding it out towards the rear before lifting up.
   - 2 screws on the rear
   - 1 screw each on the left & right side

2) Loosen 3 screws each to remove the Panel Left (pos 253) and Panel Right (pos 254). The Panels are removed by sliding it towards the rear and outwards.
   - 2 screws on the rear
   - 1 screw on the side

3) To loosen the Panel Front Display (pos 120), you have to press in the correct direction and position as shown in Figure 1 and Figure 2. Once the Panel Front Display is loosen, remove it out in the direction as shown in Figure 3.

4) Loosen 4 screws A (see Figure 4 and Figure 16) to remove the 5DTC Module (pos 1105).
   - 2 screws on the front
   - 2 screws on the rear

   Note : For information on the 'Emergency opening of the trays' of the 5DTC Module, refer to Chapter 10 (Page 10-7).

Figure 1

Figure 2

Figure 3

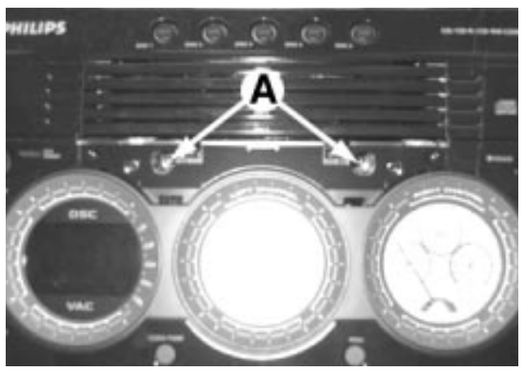


Figure 4

Detaching the Front Panel assembly from the Bottom/Rear assembly

1) Remove 2 screws B (pos 226) as shown in Figure 5 from the bottom of the Cabinet Front (pos 101).

2) Release the fixation of the AF Board (pos1102-A) to Bracket CDC Right (pos 186) by releasing the 2 catches C1 (see Figure 7) and pulling the AF Board outwards as shown in Figure 6.

3) Uncatch 2 catches C2 (see Figure 7) on the left & right sides of the Cabinet Front (pos 101) and slides the Front Panel assembly out towards the front.

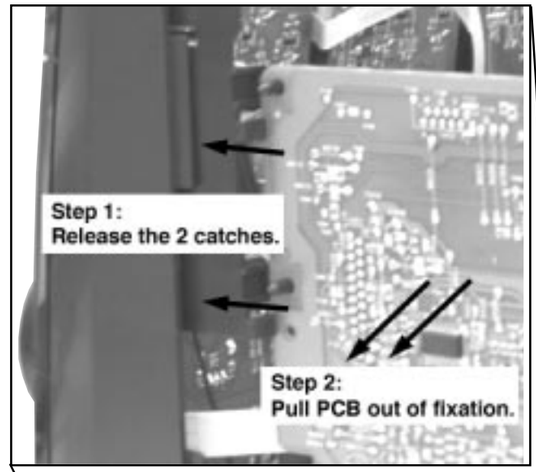


Figure 6

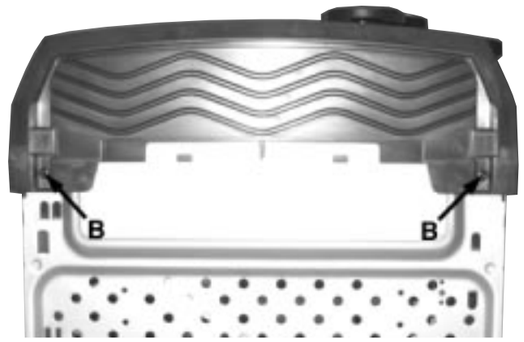


Figure 5

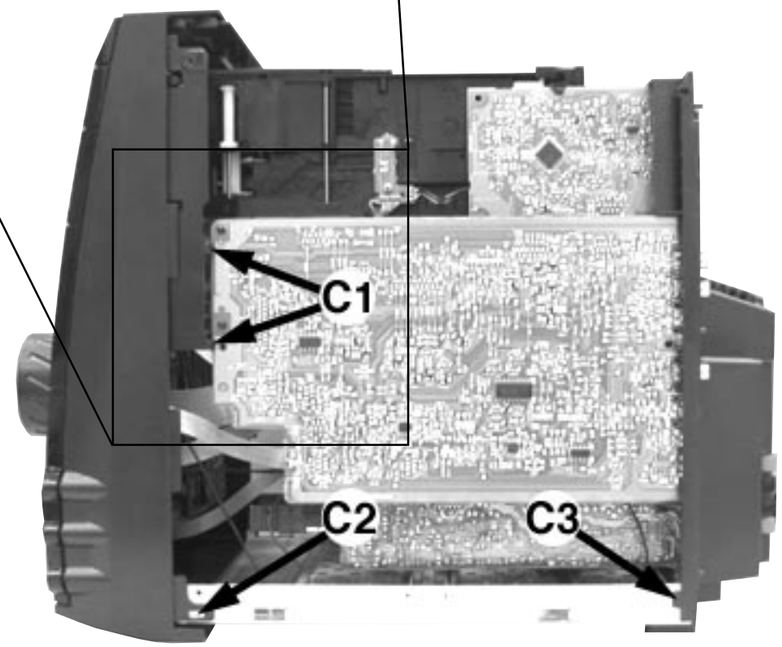


Figure 7

DISMANTLING INSTRUCTIONS

Dismantling of the Front Control Board and Front Display Board

1) The Knob Volume Rotary (pos 164) can be remove by pulling it out in the direction as shown in Figure 8.

2) The Knob Game Sound Control (pos 176) can be remove by pulling it out in the direction as shown in Figure 9.

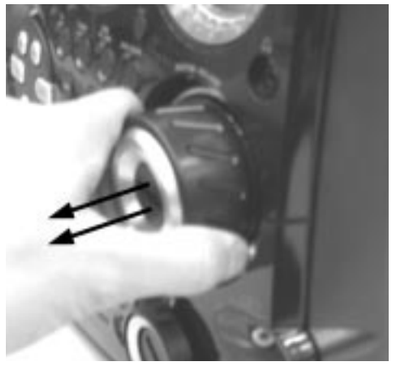


Figure 8

Figure 9

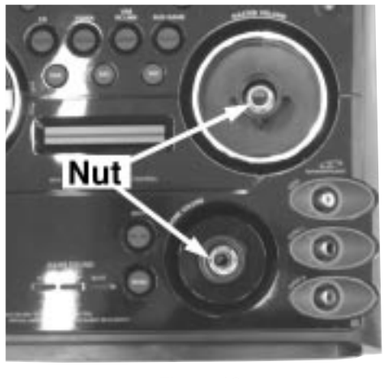


Figure 10

3) Loosen 4 screws D (see Figure 11) to remove the Bracket PCB Front Display (pos 183) and Front Display Board (pos 1101-A).

4) Loosen 1 screw E (see Figure 12) to remove the IR Eye Board (pos 1107-H).

5) Loosen 2 screws F (see Figure 12) to remove the ECO Power Board (pos 1107-E).

6) Loosen 3 screws G (see Figure 12) to remove the Bracket VU Meter 2 (pos 136) and loosen 2 screws H to remove the VU Meter Right Board (pos 1107-D) from the Bracket VU Meter 2.

7) Loosen 3 screws J (see Figure 12) to remove the Bracket VU Meter 1 (pos 129) and loosen 2 screws K to remove the VU Meter Left Board (pos 1107-C) from the Bracket VU Meter 1.

8) Loosen 2 screws L (see Figure 13) to remove the USB PC LINK Board (pos 1104).

9) Loosen 9 screws M (see Figure 13) and loosen the 2 nuts (see Figure 10) to remove the Front Control Board (pos 1107-A).

10) Loosen 1 screw N (see Figure 13) to remove the Headphone Board (pos 1107-B).

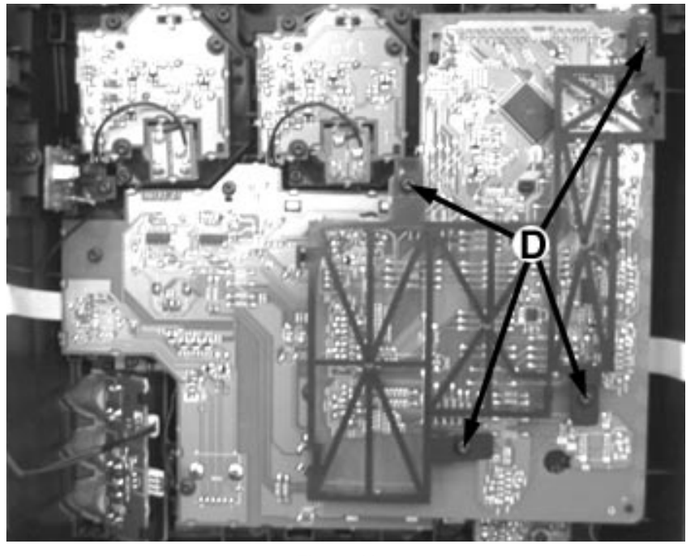


Figure 11

2-2

Dismantling of the Front Control Board and Front Display Board

11) Loosen 3 screws P (see Figure 14) to remove the Game Port Board (pos 1107-G).

12) Loosen 2 screws Q (see Figure 15) to remove the USB LED Board (pos 1107-F).

Figure 12

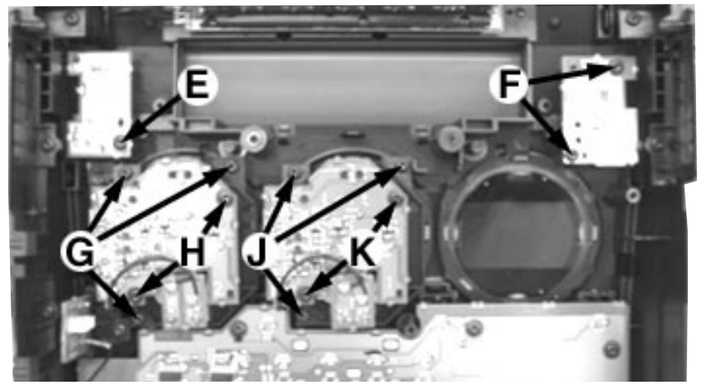
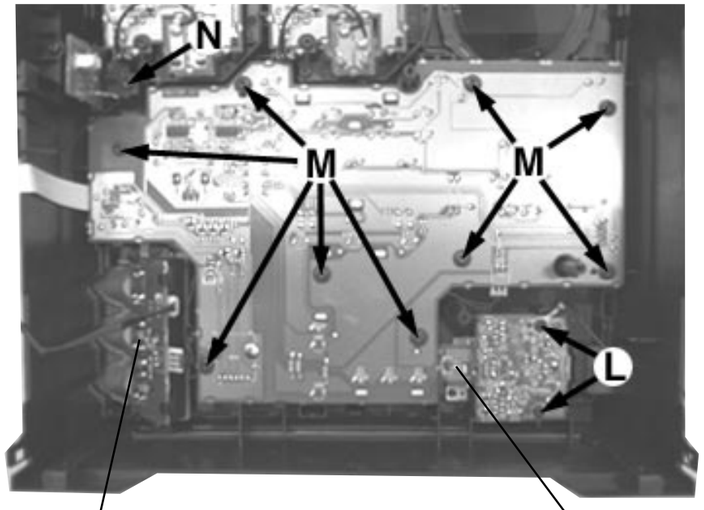


Figure 13



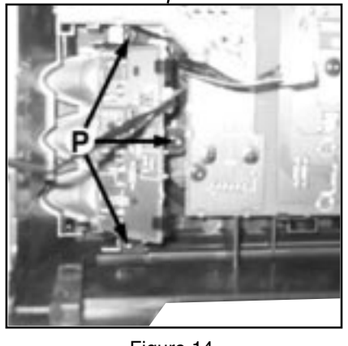


Figure 14

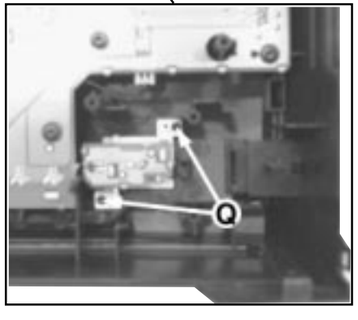


Figure 15

DISMANTLING INSTRUCTIONS

Dismantling of the Rear Panel assembly

1) Loosen 3 screws S and 2 catches C4 (see Figure 16) to remove the Tuner Board assembly.

2) Loosen 2 screws T (see Figure 16) to free the AF Board (pos 1102-A).

3) Loosen 1 screw U (see Figure 16) to remove the Video Cinch Out Board (pos 1102-B).

4) Loosen 1 screw V (see Figure 16) to free the Mains Socket Board (pos 1106-1001-B).

5) Loosen 4 screws W (see Figure 16) and 2 catches C3 (see Figure 7) to remove the Panel Rear (pos 256) by sliding it out towards the rear (see Figure 19).
Note : Tuner Board assembly and Mains Socket Board can also be remove together with the Panel Rear.

6) Loosen 2 screws Y (see Figure 17) and 2 catches C5 (see Figure 16) to remove the Bracket Fan (pos 266).

7) Loosen 4 screws Z (see Figure 18) to remove the Fan (pos 1121) from the Bracket Fan (pos 266).

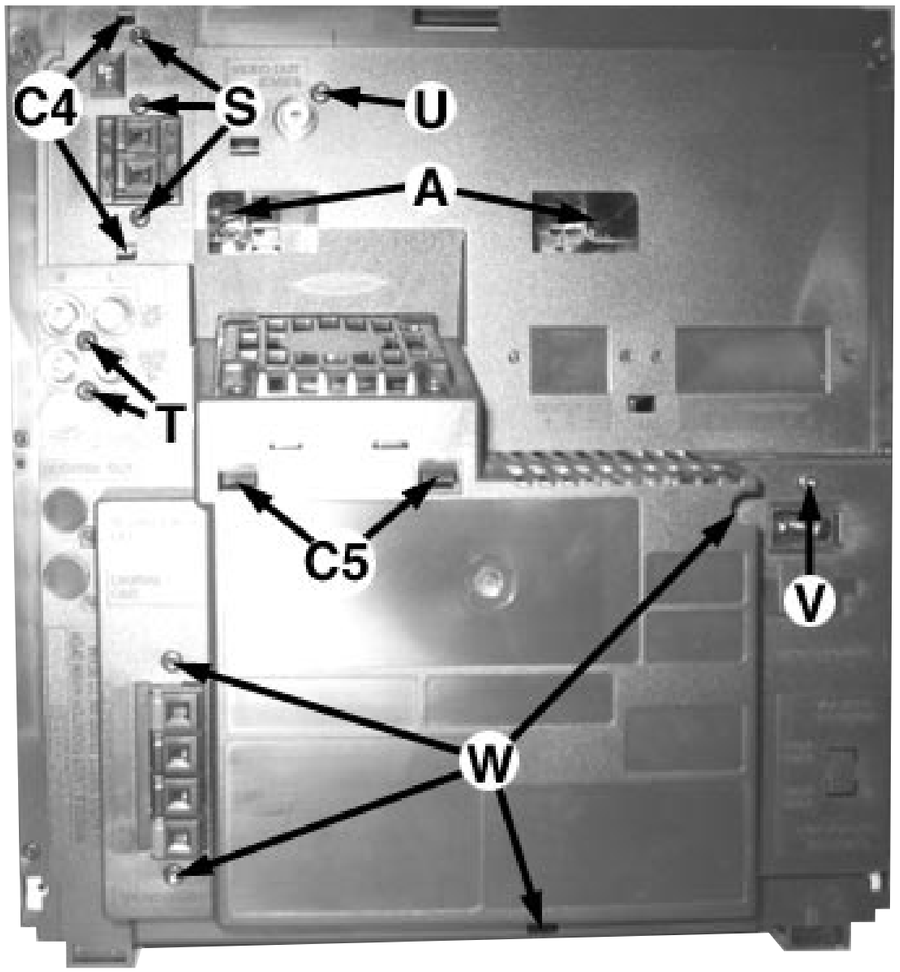


Figure 16

2-3

Dismantling of the Rear Panel assembly

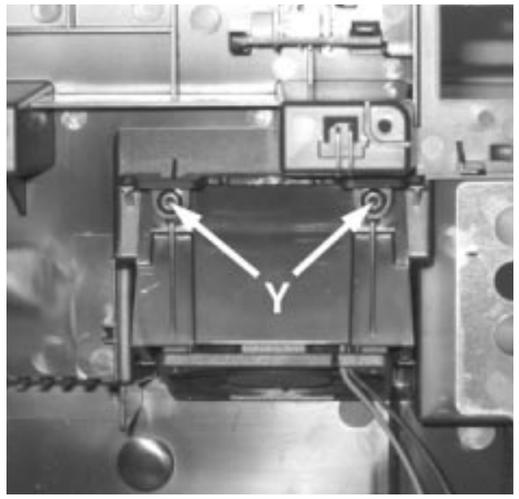


Figure 17

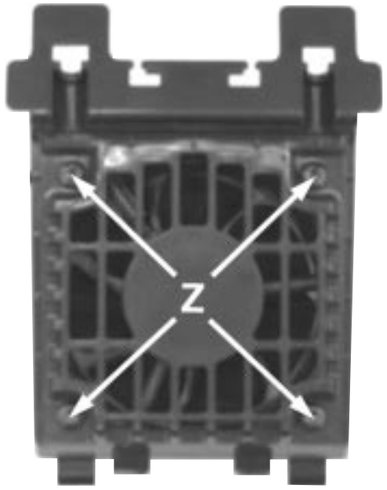


Figure 18

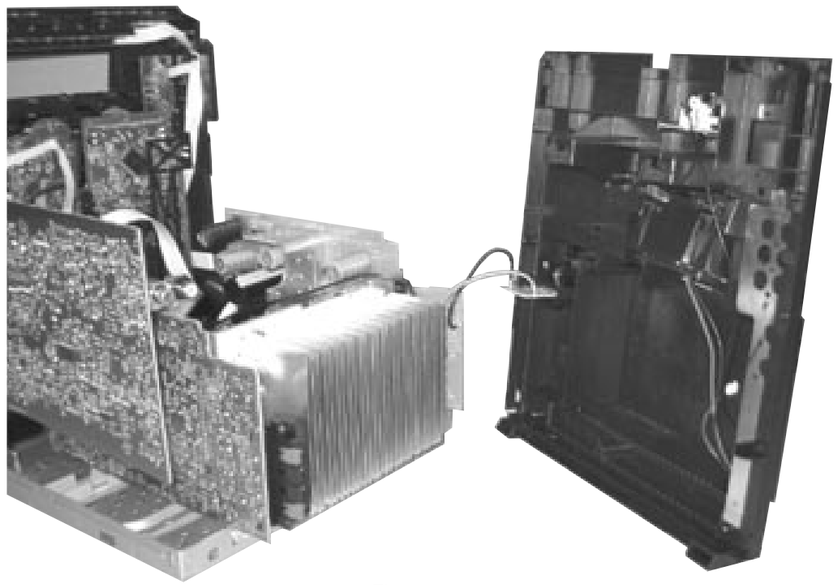


Figure 19

Repair Hints

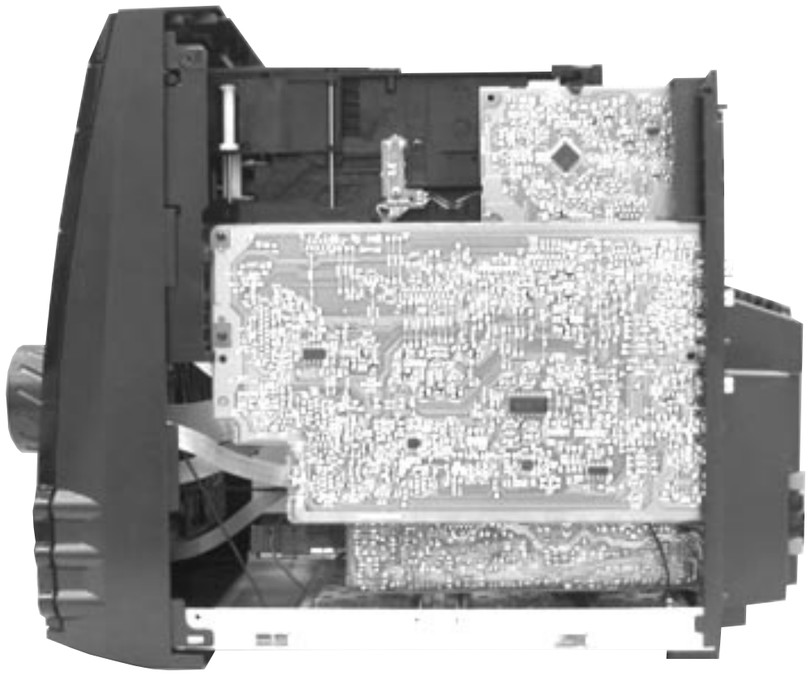
1) During repair it is possible to disconnect the ECO6 Tuner board and/or 5DTC Module completely unless the fault is suspected to be in that area. This will not affect the performance of the rest of the set.

Note: The flex cables are very fragile, care should be taken not to damage them during repair. After repair, be very sure that the flex cables are inserted properly into the flex sockets before encasing, otherwise faults may occurs.

2-4

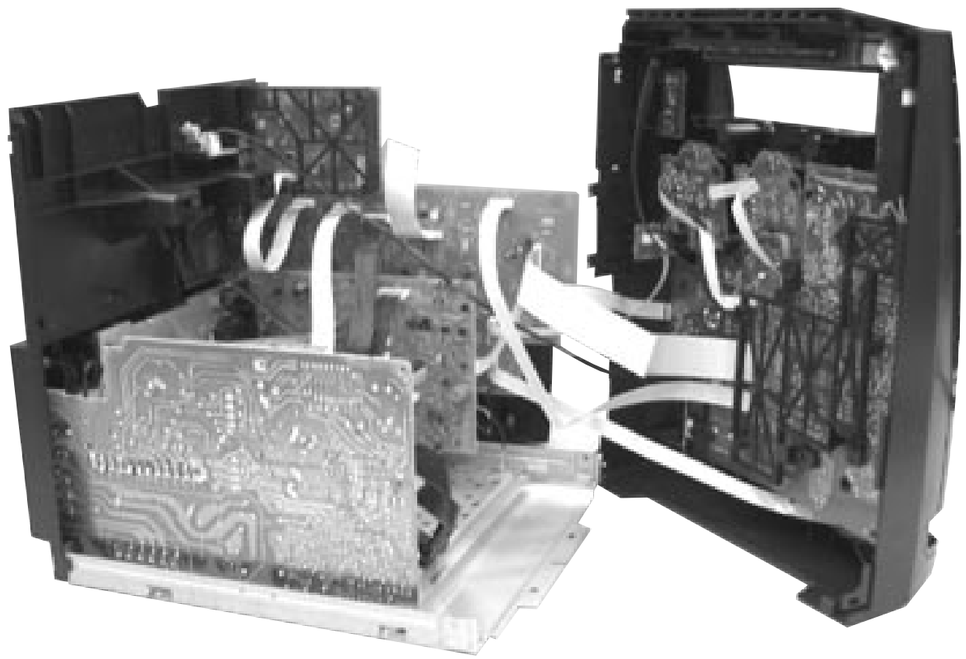
DISMANTLING INSTRUCTIONS

Service position A



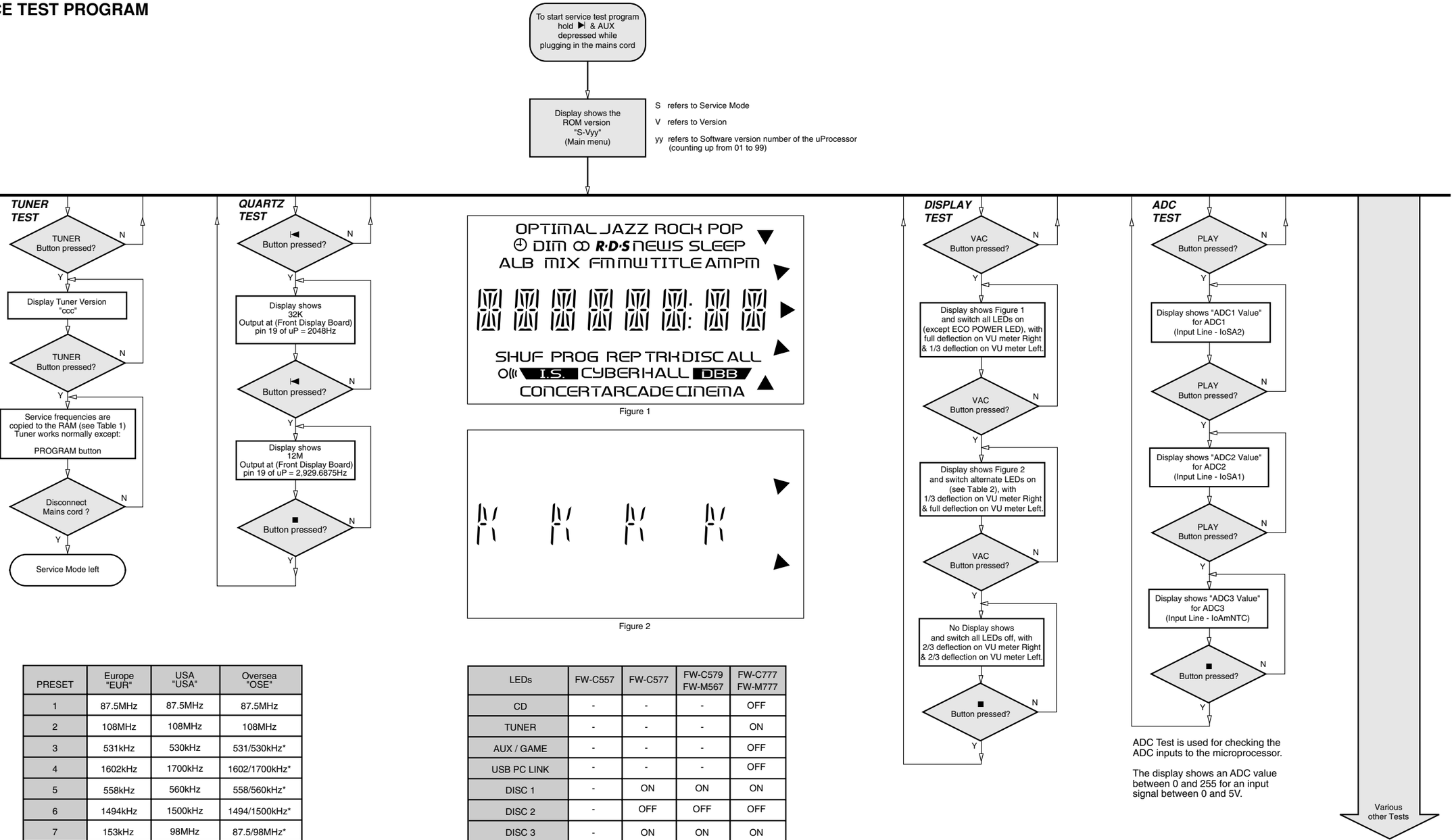
Service position B

Service position C



3-1

SERVICE TEST PROGRAM


To start service test program hold ▶| & AUX depressed while plugging in the mains cord
Display shows the ROM version "S-Vyy" (Main menu)
S refers to Service Mode
V refers to Version
yy refers to Software version number of the uProcessor (counting up from 01 to 99)
TUNER TEST
TUNER Button pressed?
Display Tuner Version "ccc"
TUNER Button pressed?
Service frequencies are copied to the RAM (see Table 1) Tuner works normally except: PROGRAM button
Disconnect Mains cord ?
Service Mode left
QUARTZ TEST
|◀ Button pressed?
Display shows 32K Output at (Front Display Board) pin 19 of uP = 2048Hz
|◀ Button pressed?
Display shows 12M Output at (Front Display Board) pin 19 of uP = 2,929.6875Hz
■ Button pressed?
DISPLAY TEST
VAC Button pressed?
Display shows Figure 1 and switch all LEDs on (except ECO POWER LED), with full deflection on VU meter Right & 1/3 deflection on VU meter Left.
VAC Button pressed?
Display shows Figure 2 and switch alternate LEDs on (see Table 2), with 1/3 deflection on VU meter Right & full deflection on VU meter Left.
VAC Button pressed?
No Display shows and switch all LEDs off, with 2/3 deflection on VU meter Right & 2/3 deflection on VU meter Left.
■ Button pressed?
ADC TEST
PLAY Button pressed?
Display shows "ADC1 Value" for ADC1 (Input Line - IoSA2)
PLAY Button pressed?
Display shows "ADC2 Value" for ADC2 (Input Line - IoSA1)
PLAY Button pressed?
Display shows "ADC3 Value" for ADC3 (Input Line - IoAmNTC)
■ Button pressed?
Various other Tests

OPTIMAL JAZZ ROCK POP
DIM R·D·S NEWS SLEEP
ALB MIX FM MW TITLE AM PM
SHUF PROG REP TRK DISC ALL
I.S. CYBERHALL DBB
CONCERT ARCADE CINEMA

Figure 1

Figure 2

ADC Test is used for checking the ADC inputs to the microprocessor.

The display shows an ADC value between 0 and 255 for an input signal between 0 and 5V.

PRESET	Europe "EUR"	USA "USA"	Oversea "OSE"
1	87.5MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz
3	531kHz	530kHz	531/530kHz*
4	1602kHz	1700kHz	1602/1700kHz*
5	558kHz	560kHz	558/560kHz*
6	1494kHz	1500kHz	1494/1500kHz*
7	153kHz	98MHz	87.5/98MHz*
8	279kHz	87.5MHz	87.5MHz
9	198kHz	87.5MHz	87.5MHz
10	98MHz	87.5MHz	87.5MHz
11	87.5MHz	87.5MHz	98/87.5MHz*

Table 1

Note:
* Depending on the selected grid frequency (9 or 10kHz).
By holding the TUNER and ►► buttons depressed while switching on the Mains supply, the tuning grid frequency is toggled between 9kHz and 10kHz for the Oversea (/21) version.

LEDs	FW-C557	FW-C577	FW-C579 FW-M567	FW-C777 FW-M777
CD	-	-	-	OFF
TUNER	-	-	-	ON
AUX / GAME	-	-	-	OFF
USB PC LINK	-	-	-	OFF
DISC 1	-	ON	ON	ON
DISC 2	-	OFF	OFF	OFF
DISC 3	-	ON	ON	ON
DISC 4	-	OFF	OFF	OFF
DISC 5	-	ON	ON	ON
^^ MAX 1 (WOOX 1)	OFF	OFF	OFF	OFF
^^ MAX 2 (WOOX 2)	ON	ON	ON	ON
^^ MAX 3 (WOOX 3)	OFF	OFF	OFF	OFF
SPEED	ON	ON	ON	ON
PUNCH	OFF	OFF	OFF	OFF
BLAST	OFF	OFF	OFF	OFF
USB Indicator	-	OFF	OFF	OFF

Table 2

^^ MAX - FW-C557, FW-C577, FW-C579, FW-M567
WOOX - FW-C777, FW-M777

TEST	*Activated with*	*ACTION*
EEPROM TEST	►► ■ to Exit	A test pattern will be sent to the EEPROM. "PASS" is displayed if the uProcessor read back the test pattern correctly, otherwise "FAIL" will be displayed.
EEPROM FORMAT TEST	◄◄	Load default data. Display shows "NEW" for 1 second. ***Caution! All presets from the customer will be lost!!***
DEMO TOGGLE	^^ MAX (WOOX 2)	Pressing this button will toggle between DEMO ON and DEMO OFF. The DEMO status will scroll once across the Display.
ROTARY ENCODER TEST	Rotary Volume Knob	Display shows value for 2 seconds. Values increases or decreases until Volume Maximum (VOL MAX) or Volume Minimum (VOL MIN) is reached.
MICRONAS FIRMWARE VERSION	USB PC LINK ■ to Exit	To read out the Firmware Version of IC UAC3553 on the USB PC LINK Board. Display shows "Vxxxx" (xxxx = Firmware Version number).
LEAVE SERVICE TEST PROGRAM	Disconnect mains cord	

3-2

SERVICE TEST PROGRAM

To start service test program hold ▶I & AUX depressed while plugging in the mains cord

Display shows the ROM version "S-Vyy" (Main menu)

S refers to Service Mode

V refers to Version

yy refers to Software version number of the uProcessor (counting up from 01 to 99)

5DTC CONTROL & MP3 CD MODULE TEST (For MP3 set only)

CD Button pressed? N / Y

Note : Disc should be available on the tray before entering the Service Test Mode.

** Choose level by pressing ◄◄ ►►

STEP	DISPLAY	MESSAGE OKAY	MESSAGE ERROR	ACTION
1	5DTC-Vnn	-	5DTC-ER	Version of the 5DTC control software (nn = Version Number).
2	MP3CD'02	-	-	Indicates the module used.
**3	TI-Vnn	-	-	Version of the MPEG software (nn = Version Number).
**4	TI BUS	BUS OK	BUS ER	Communication test between the Main uP and CD Module
**5	TI SLD I	-	-	CD SLEDGE MOTOR is moved in.
**6	TI SLD O	-	-	CD SLEDGE MOTOR is moved out.
**7	TI FOC	FOC OK	FOC ER	FOCUS SERVO Test.
				Press ■ to exit

SERVICE PLAY MODE (For non MP3 set only)

STANDBY ON Button pressed? N / Y

Set is in Service PLAY Mode

CD Button pressed? N / Y

Display shows "5DTC-Vnn" - Version of 5DTC control software (nn = Version Number).

DTC works as in normal operation. In case of failures, error codes according to Table 3A and Table 3B will be displayed.

The Service Play Mode is intended to detect and identify the failures in the CD Mode.

In this mode the DTC works as in normal operation. The electronics will still function even when an error is detected so that repair activities can be carried out.

GAME PORT TEST

GAME Button pressed? N / Y

Display shows "GAME PORT"

MIX-IT Button pressed? N / Y

Choose desired background source by pressing button " MIX-IT "

STEP	DISPLAY (SCROLL ONCE)	ACTION
1	MIX-CD	Select CD as background sound source. Press PLAY to play the track.
2	MIX-TU	Select TUNER as background sound source.
3	MIX-USB	Select PC-LINK (for set with PC-LINK) as background sound source. Press PLAY to play the track.
4	MIX-AUX	Select AUX as background sound source.
5	MIX-OFF	No mixing.
		Disconnect mains cord to exit

Error code	Error Description
E1000	Focus Error Triggered when the focus cannot be found within a certain time when starting up the CD, or if the focus is lost for more than a certain time during playing of CD.
E1001	Radial Error Triggered when the radial servo is off-track for a certain time during playing of CD.
E1002	Sledge In Error The sledge did not reach its inner position (inner-switch is still close) before approximately 6 seconds have passed by. Inner-switch or sledge motor problem.
E1003	Sledge Out Error The sledge did not come out of its inner position (inner-switch is still open) before approximately 250ms have passed by. Inner-switch or sledge motor problem.
E1005	Jump Error Triggered in normal play when the jump destination could not be found within a certain time.

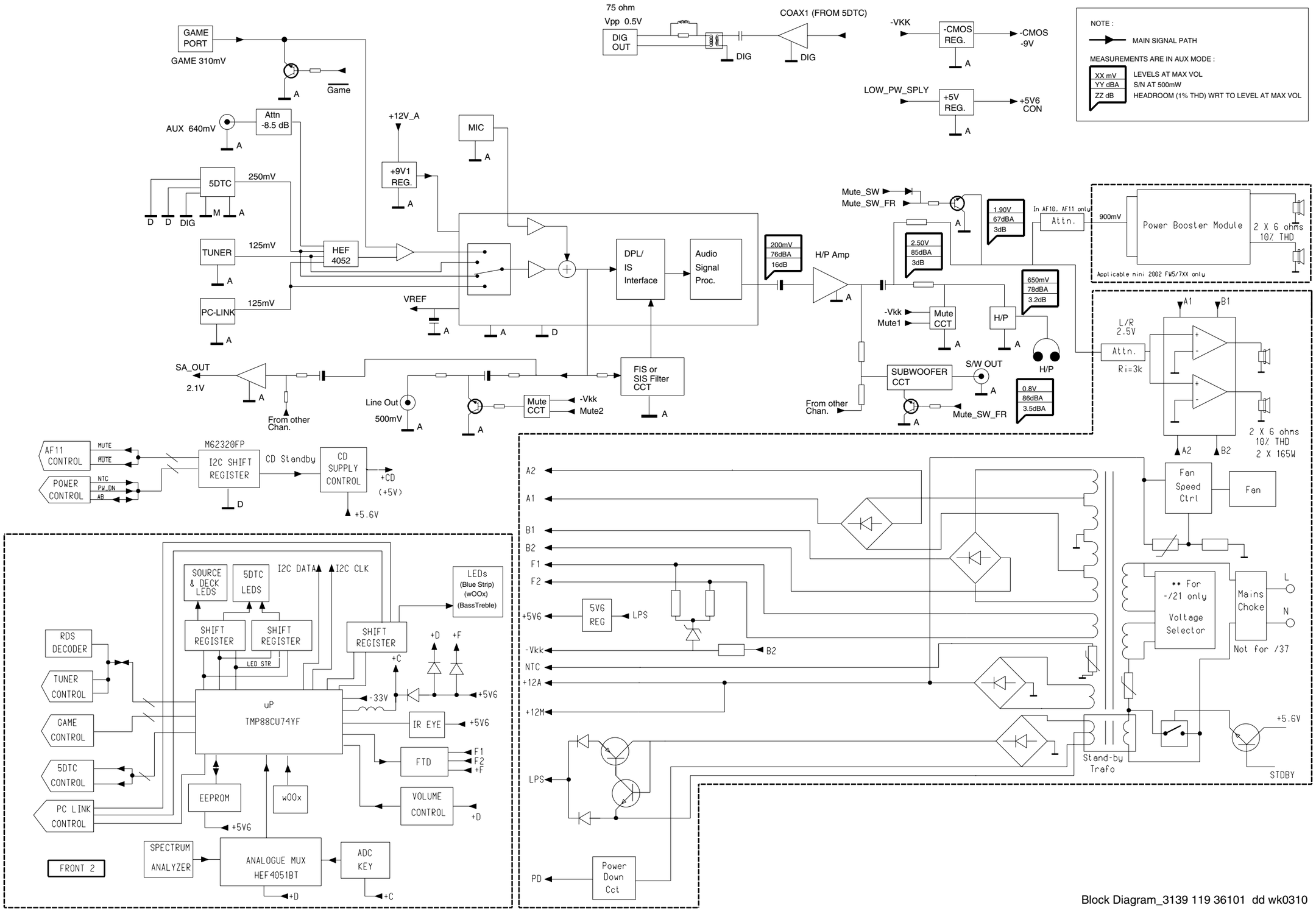
Table 3A

Error code	Error Description
E1006	Subcode Error Triggered when a new subcode was missing for a certain time during playing of CD.
E1007	PLL Error The Phase Lock Loop could not lock within a certain time.
E1008	Turntable Motor Error Generated when the CD could not reached 75% of speed during start-up within a certain time. Disc motor problem.
E1020	Focus Search Error The focus point has not been found within a certain time.
E1061	The tray could not enter the inside position and is opening again. This can happen if the tray is blocked such that it cannot go fully inside, or if the 5DTC control module is defective and never closes.
E1079	The tray could not reach the outside position and is stopped at its blocked position. This can happen if the tray is blocked such that it cannot go fully outside, or if the 5DTC control module is defective and never opens.

Table 3B

4-1

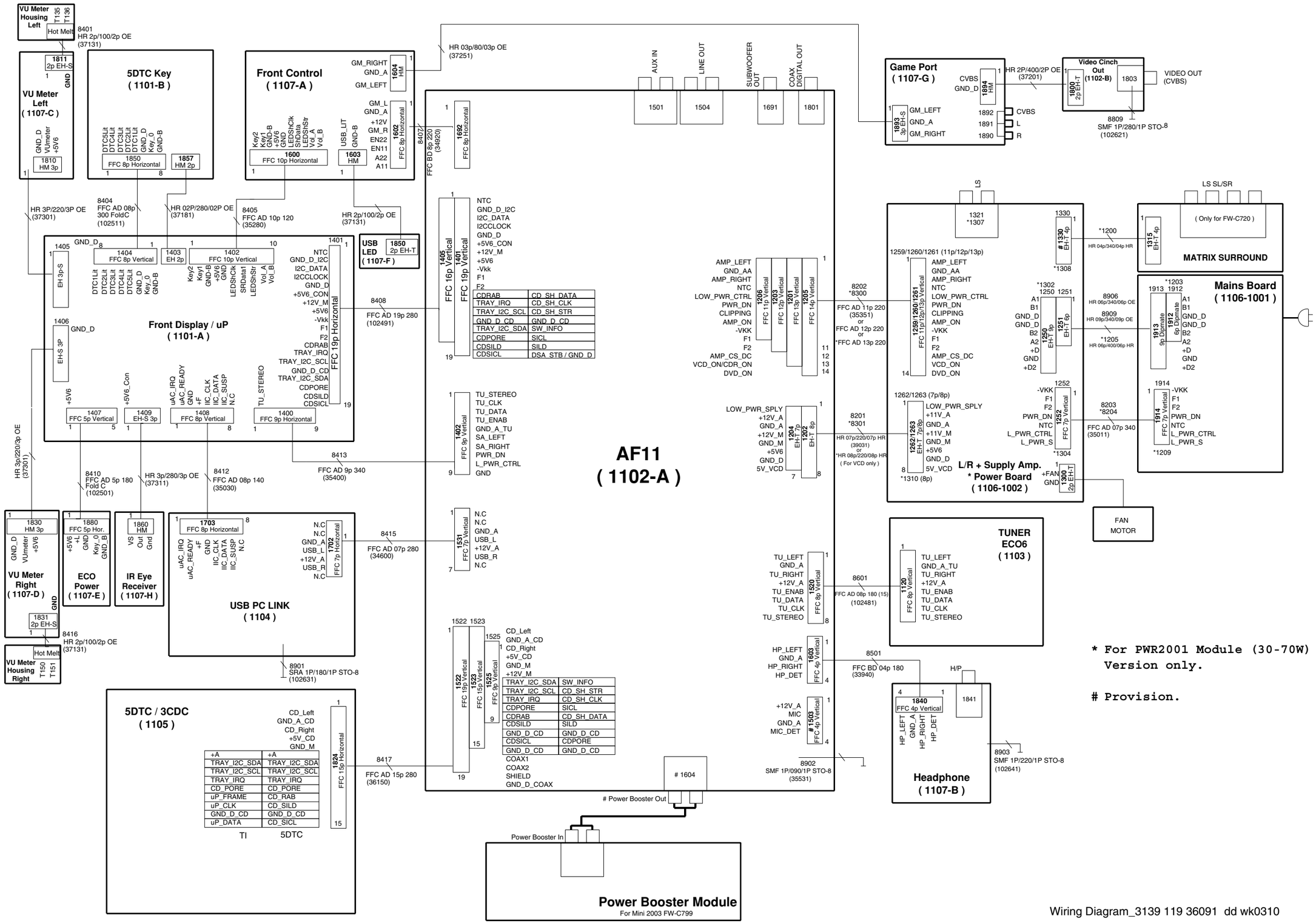
SET BLOCK DIAGRAM



Block Diagram_3139 119 36101 dd wk0310

4-2

SET WIRING DIAGRAM



* For PWR2001 Module (30-70W) Version only.

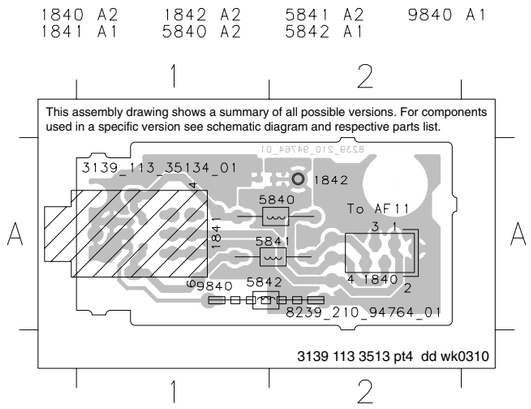
\# Provision.

FRONT CONTROL BOARD

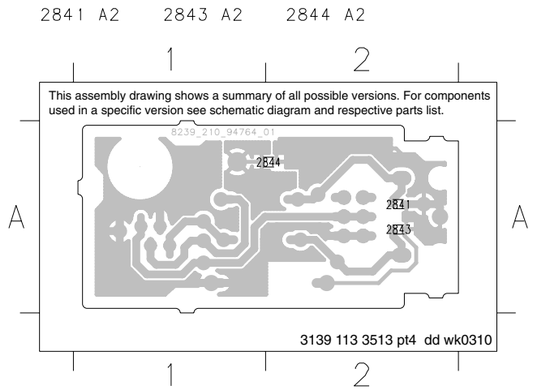
TABLE OF CONTENTS

Headphone part - Layout & Circuit diagram 5-1
Control part - Component Layout 5-2
Control part - Chip Layout 5-3
Control part - Circuit diagram 5-4
ECO Power part - Layout & Circuit diagram 5-5
Game Port part - Layout & Circuit diagram 5-5
VU Meter (Left) part - Layout & Circuit diagram 5-6
VU Meter Housing (Left) part - Layout & Circuit 5-6
VU Meter (Right) part - Layout & Circuit diagram 5-7
VU Meter Housing (Right) part - Layout & Circuit 5-7
IR Eye part - Layout & Circuit diagram 5-8
USB LED part - Layout & Circuit diagram 5-8
Electrical parts list 5-9

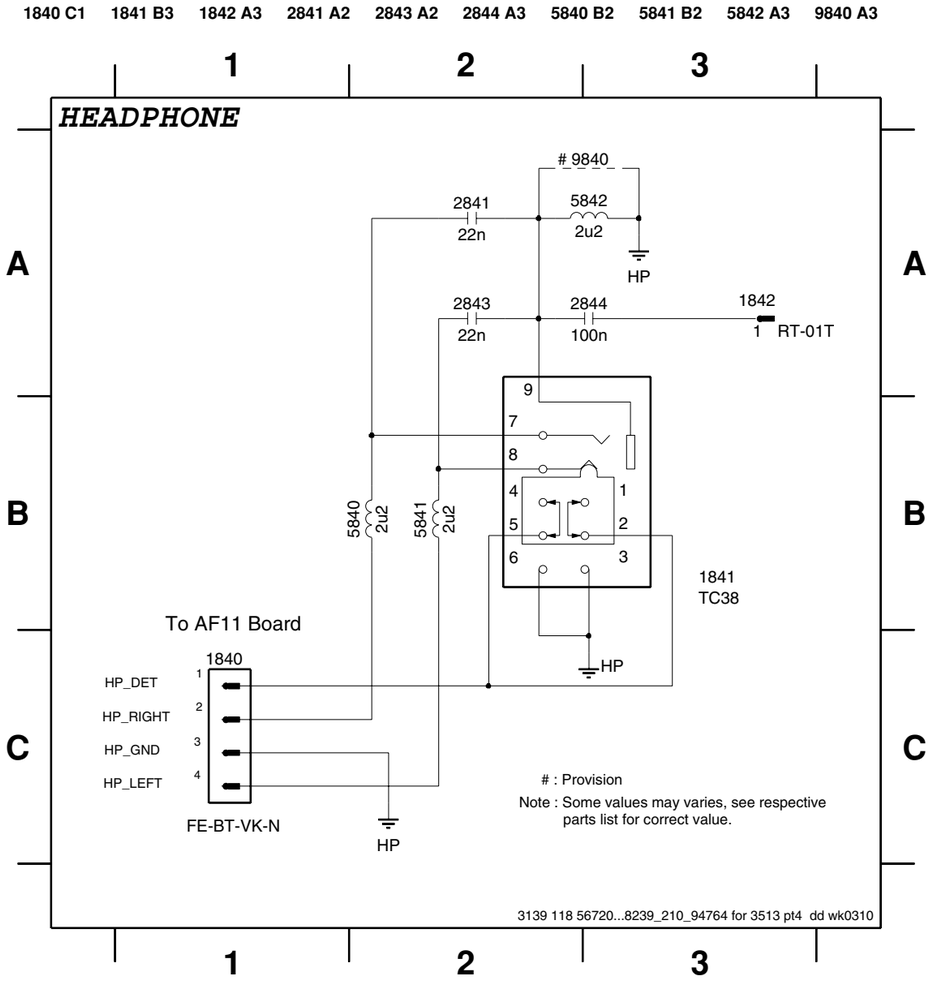
HEADPHONE BOARD - COMPONENT LAYOUT



HEADPHONE BOARD - CHIP LAYOUT



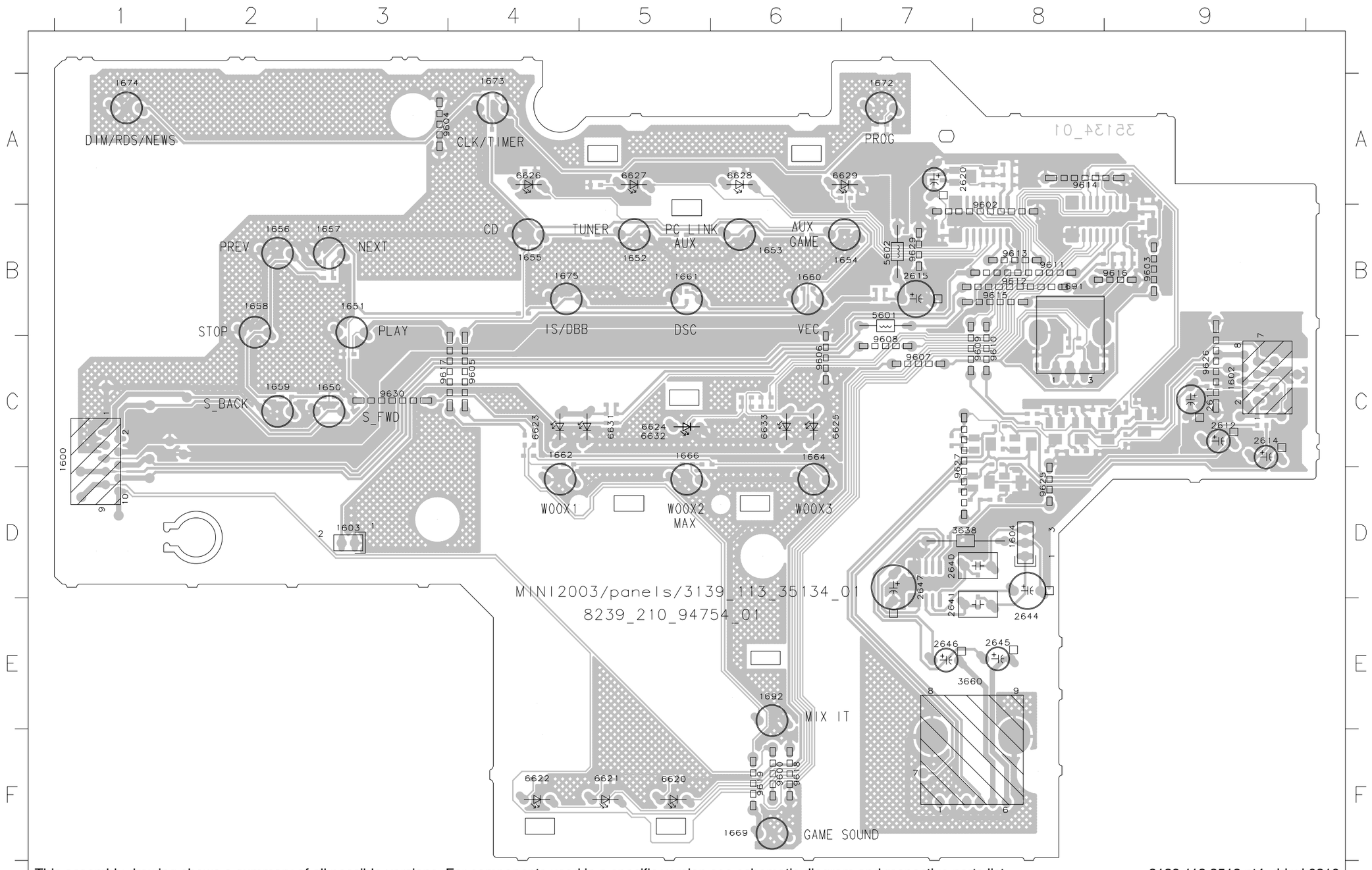
HEADPHONE BOARD - CIRCUIT DIAGRAM



5-2

CONTROL BOARD - COMPONENT LAYOUT

1600 C1	1651 B3	1656 B2	1661 B5	1672 A7	1692 E6	2620 A7	2646 E7	5602 B7	6624 C5	6629 A7	9602 B8	9607 C7	9612 B8	9617 C3	9627 C7
1602 C9	1652 B5	1657 B3	1662 C4	1673 A4	2611 C9	2640 D7	2647 D7	6620 F5	6625 C6	6631 C5	9603 B9	9608 C7	9613 B8	9618 F6	9629 B7
1603 D3	1653 B6	1658 B2	1664 C6	1674 A1	2612 C9	2641 E7	3638 D7	6621 F5	6626 A4	6632 C5	9604 A3	9609 C8	9614 A8	9619 F6	9630 C3
1604 D8	1654 B7	1659 C2	1666 C5	1675 B4	2614 C9	2644 E8	3660 E7	6622 F4	6627 A5	6633 C6	9605 C4	9610 C8	9615 B8	9625 D8	
1650 C3	1655 B4	1660 B6	1669 F6	1691 B8	2615 B7	2645 E8	5601 B7	6623 C4	6628 A6	9600 F6	9606 C6	9611 B8	9616 B9	9626 C9	



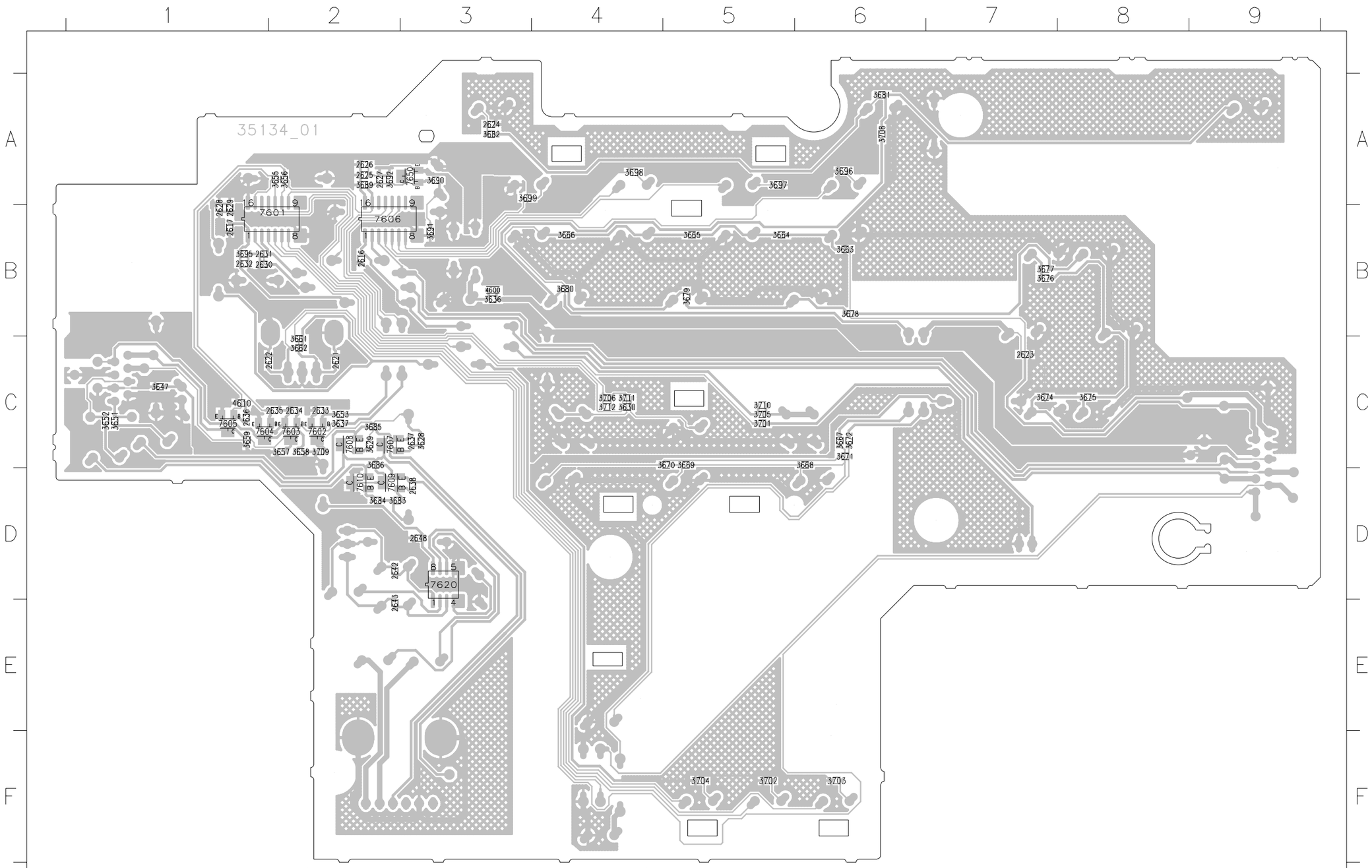
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3513 pt4 dd wk0310

5-3

CONTROL BOARD - CHIP LAYOUT

2616 B2	2625 A2	2631 B1	2637 C3	3629 C2	3652 C1	3659 C1	3666 B4	3672 C6	3679 B5	3685 C2	3695 B1	3702 F5	3709 C2	7601 B2	7607 C2
2617 B1	2626 A2	2632 B1	2638 D3	3630 C4	3653 C2	3661 C2	3667 C6	3674 C7	3680 B4	3686 C2	3696 A6	3703 F6	3710 C5	7602 C2	7608 C2
2621 C2	2627 A2	2633 C2	2642 D2	3636 B3	3655 A2	3662 C2	3668 C6	3675 C8	3681 A6	3689 A2	3697 A5	3704 F5	3711 C4	7603 C2	7609 D2
2622 C1	2628 B1	2634 C2	2643 E2	3637 C2	3656 A2	3663 B6	3669 C5	3676 B7	3682 A3	3690 A3	3698 A4	3705 C5	3712 C4	7604 C1	7610 D2
2623 C7	2629 B1	2635 C2	2648 D3	3647 C1	3657 C2	3664 B5	3670 C5	3677 B7	3683 D2	3691 B3	3699 A3	3706 C4	4600 B3	7605 C1	7620 D3
2624 A3	2630 B1	2636 C1	3628 C3	3651 C1	3658 C2	3665 B5	3671 C6	3678 B6	3684 D2	3692 A2	3701 C5	3708 A6	4610 C1	7606 B2	7650 A3

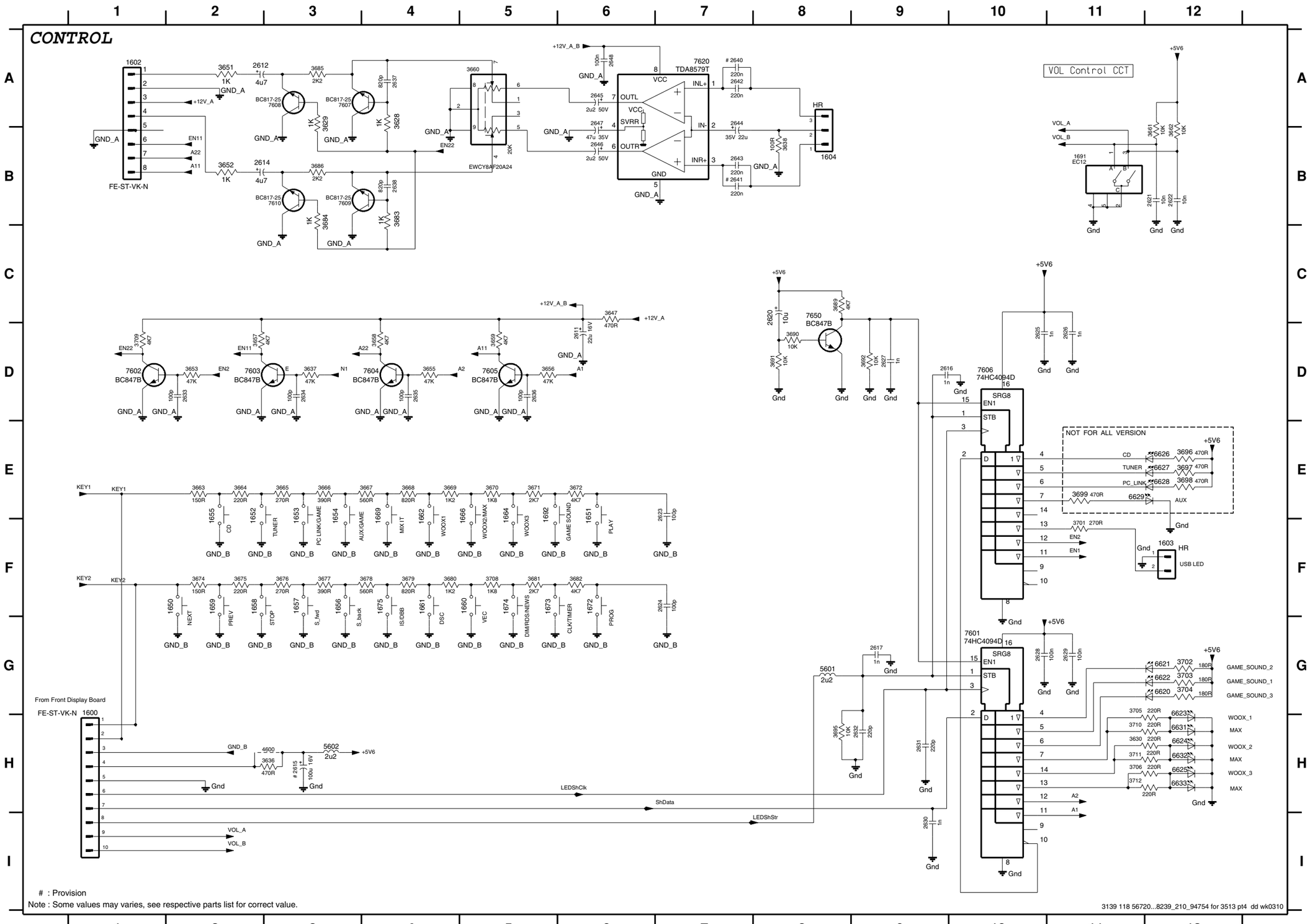


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3513 pt4 dd wk0310

5-4

CONTROL BOARD - CIRCUIT DIAGRAM



: Provision

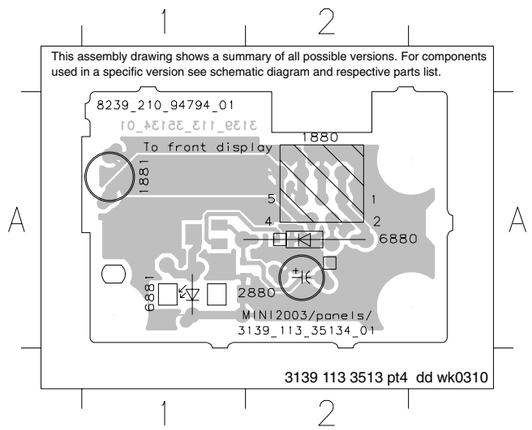
Note : Some values may varies, see respective parts list for correct value.

3139 118 56720...8239_210_94754 for 3513 pt4 dd wk0310

1600 H1	3698 E12		
1602 A1	3699 E11		
1603 F12	3701 F11		
1604 B8	3702 G12		
1650 F2	3703 G12		
1651 E6	3704 G12		
1652 E2	3705 G11		
1653 E3	3706 H11		
1654 F3	3708 F5		
1655 F2	3709 D1		
1656 F3	3710 H11		
1657 F3	3711 H11		
1658 F2	3712 H11		
1659 F2	4600 H3		
1660 F5	5601 G8		
1661 F4	5602 H3		
1662 E4	6620 G12		
1664 F5	6621 G12		
1666 F5	6622 G12		
1669 E4	6623 H12		
1672 F6	6624 H12		
1673 F5	6625 H12		
1674 F5	6626 E12		
1675 F4	6627 E12		
1691 B11	6628 E12		
1692 E5	6629 E11		
2611 D6	6631 H12		
2612 A2	6632 H12		
2614 B2	6633 H12		
2615 H3	7601 G10		
2616 D9	7602 D1		
2617 G9	7603 D2		
2620 C8	7604 D4		
2621 B12	7605 D5		
2622 B12	7606 D10		
2623 E7	7607 A3		
2624 F7	7608 A3		
2625 D10	7609 B3		
2626 D11	7610 B3		
2627 D9	7620 A7		
2628 G10	7650 C8		
2629 G11			
2630 I9			
2631 H9			
2632 H9			
2633 D2			
2634 D3			
2635 D4			
2636 D5			
2637 A4			
2638 B4			
2640 A7			
2641 B7			
2642 A7			
2643 B7			
2644 A7			
2645 A6			
2646 B6			
2647 A6			
2648 A6			
3628 A4			
3629 A3			
3630 H11			
3636 H3			
3637 D3			
3638 B8			
3647 C6			
3651 A2			
3652 B2			
3653 D2			
3655 D4			
3656 D5			
3657 D2			
3658 D4			
3659 D5			
3660 A5			
3661 B12			
3662 B12			
3663 E2			
3664 E2			
3665 E3			
3666 E3			
3667 E4			
3668 E4			
3669 E4			
3670 E5			
3671 E5			
3672 E6			
3674 F2			
3675 F2			
3676 F3			
3677 F3			
3678 F4			
3679 F4			
3680 F4			
3681 F5			
3682 F6			
3683 B4			
3684 B3			
3685 A3			
3686 B3			
3689 C8			
3690 D8			
3691 D8			
3692 D9			
3695 H8			
3696 E12			
3697 E12			

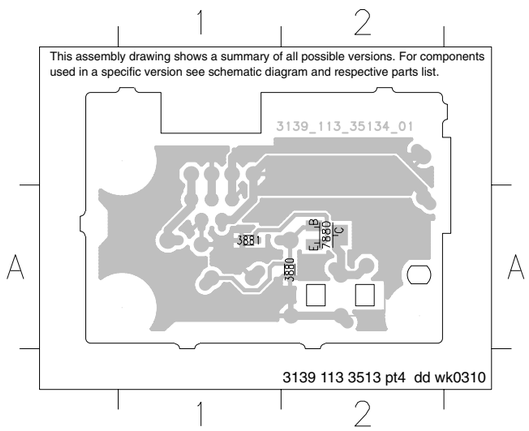
ECO POWER BOARD - COMPONENT LAYOUT

1880 A2 2880 A2 6881 A1
1881 A1 6880 A2



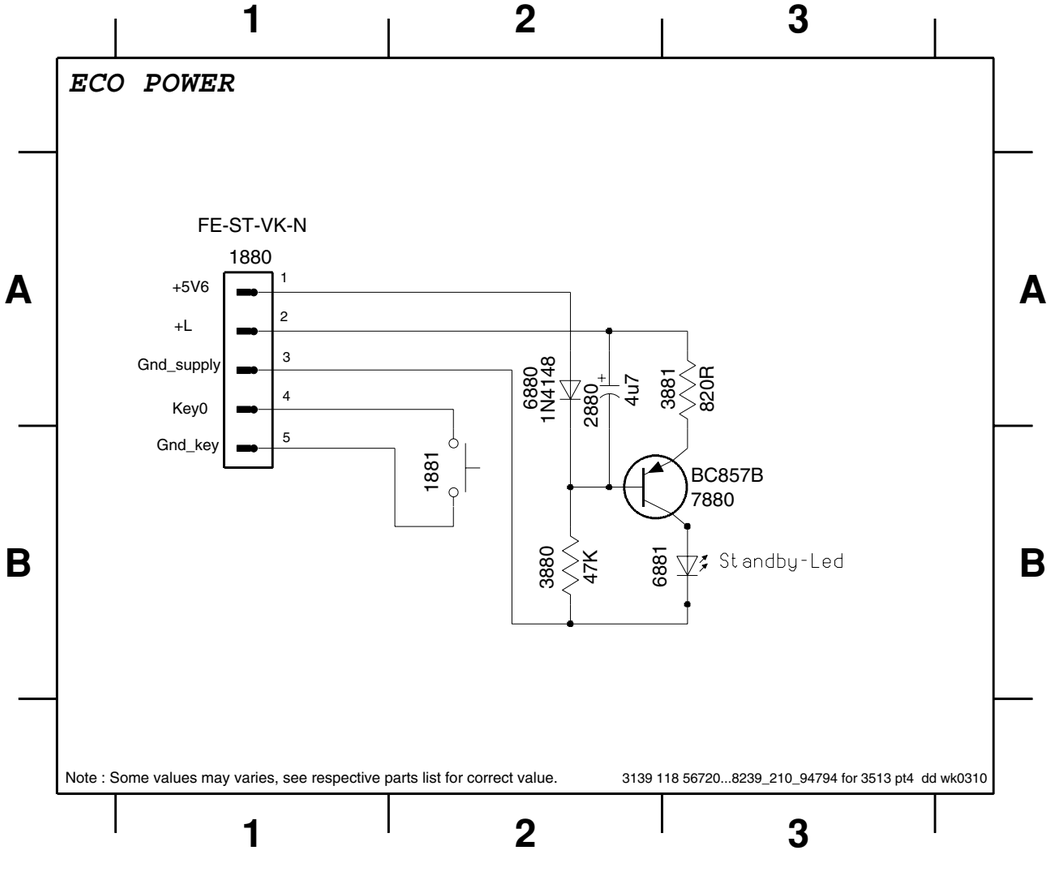
ECO POWER BOARD - CHIP LAYOUT

3880 A2 3881 A1 7880 A2


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
3139_113_35134_01
3881
3880
7880
3139 113 3513 pt4 dd wk0310

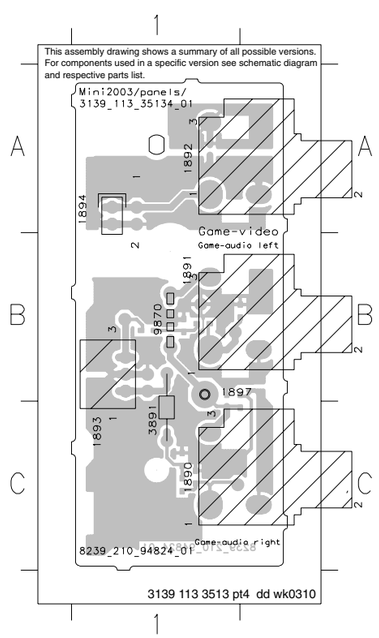
ECO POWER BOARD - CIRCUIT DIAGRAM

1880 A1 1881 B2 2880 A2 3880 B2 3881 A3 6880 A2 6881 B2 7880 B3



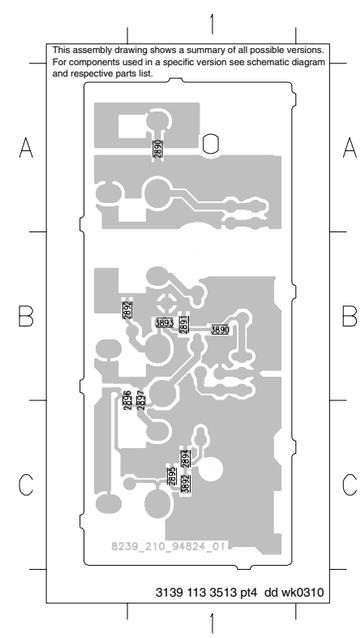
GAME PORT BOARD - COMPONENT LAYOUT

1890 C1 1893 C1 3891 C1
1891 B1 1894 A1 9870 B1
1892 A1 1897 B1


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
Mini2003/panels/
3139_113_35134_01
Game-video
Game-audio left
Game-audio right
8239_210_94824_01
3139 113 3513 pt4 dd wk0310

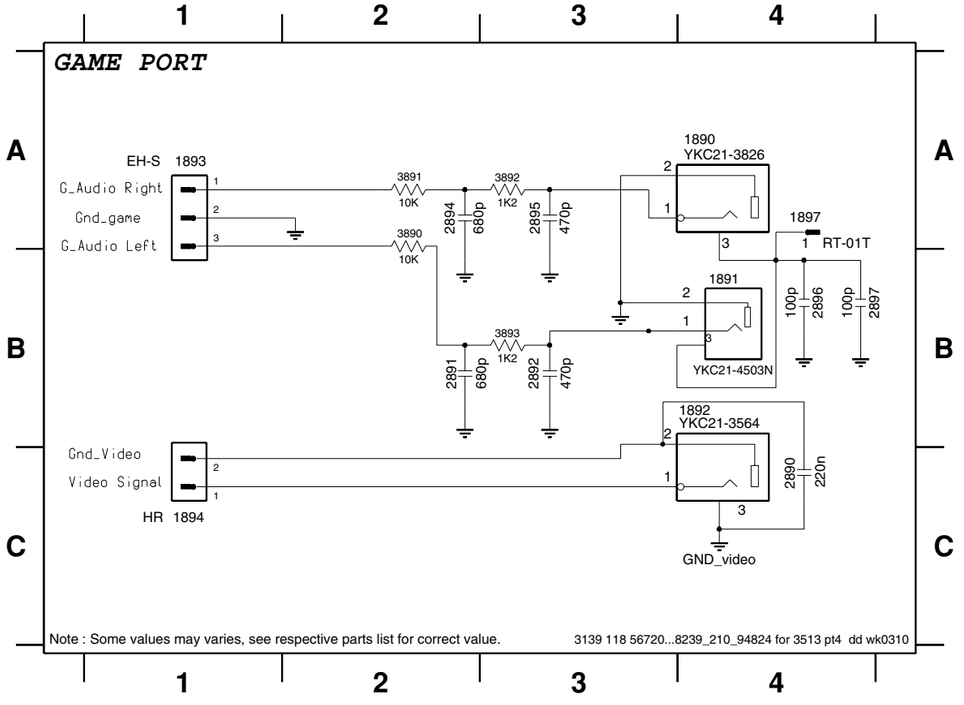
GAME PORT BOARD - CHIP LAYOUT

2890 A1 2895 C1 3892 C1
2891 B1 2896 B1 3893 B1
2892 B1 2897 B1
2894 C1 3890 B1


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
8239_210_94824_01
3139 113 3513 pt4 dd wk0310

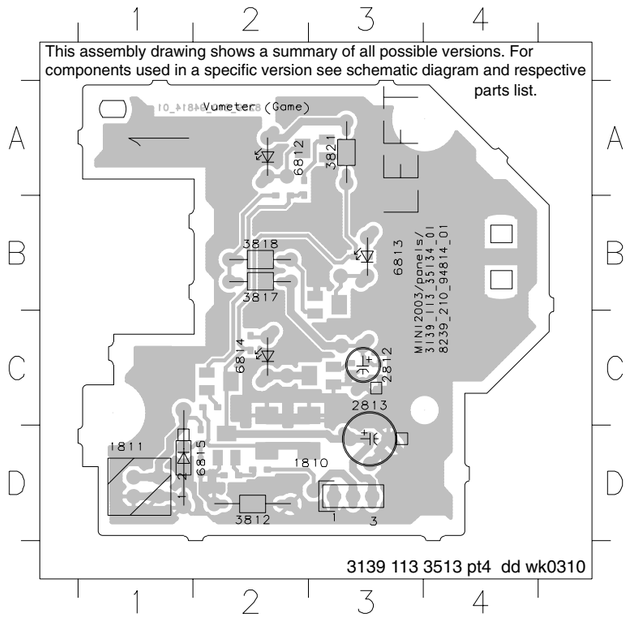
GAME PORT BOARD - CIRCUIT DIAGRAM

1890 A3 1892 B3 1894 C1 2890 C4 2892 B3 2895 A3 2897 B4 3891 A2 3893 B3
1891 B4 1893 A1 1897 A4 2891 B2 2894 A2 2896 B4 3890 A2 3892 A3



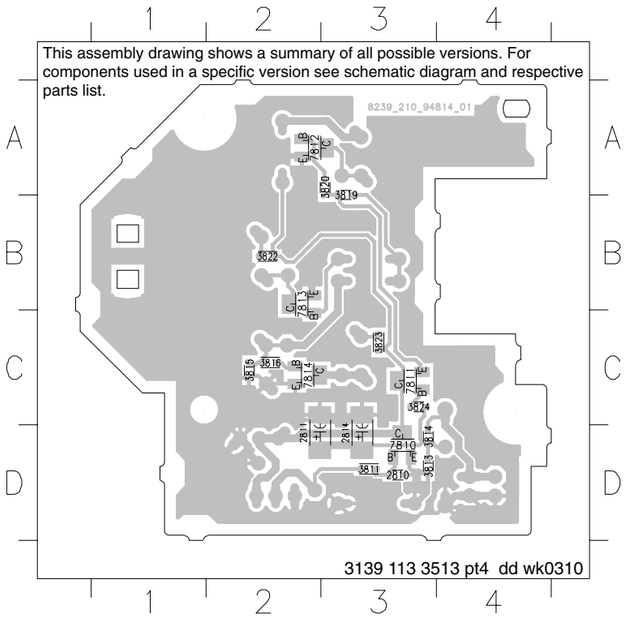
VU METER (LEFT) BOARD - COMPONENT LAYOUT

1810 D3 2813 C3 3818 B2 6813 B3
1811 D1 3812 D2 3821 A3 6814 C2
2812 C3 3817 B2 6812 A2 6815 D2


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
Vumeter (Game)
MINI2003/panels/3139_113_35134_01
8239_210_94814_01
3139 113 3513 pt4 dd wk0310

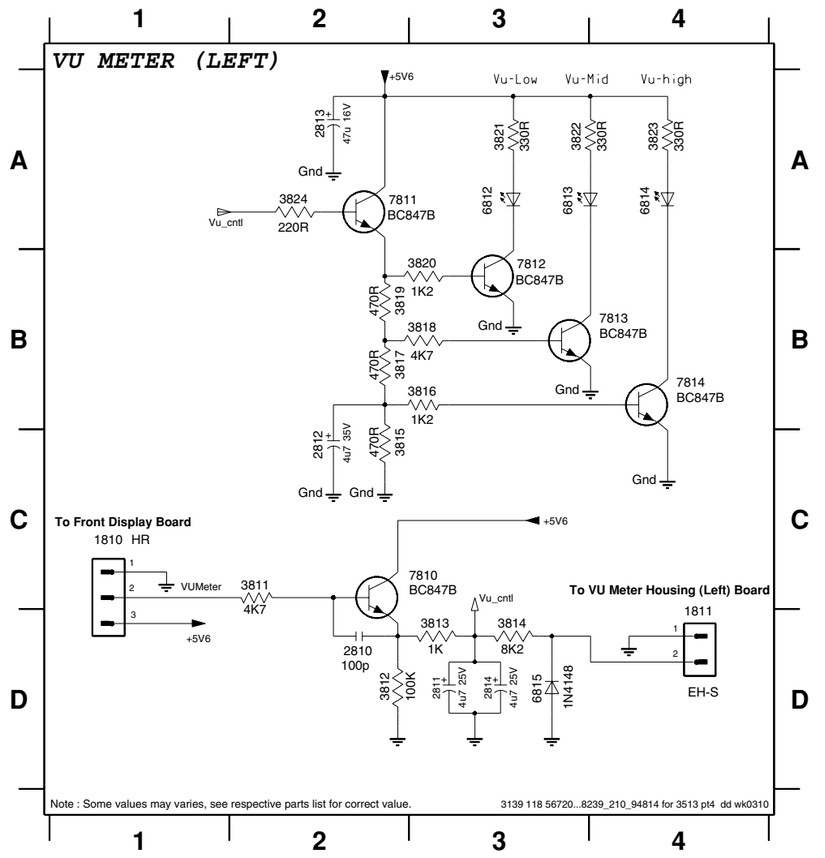
VU METER (LEFT) BOARD - CHIP LAYOUT

2810 D3 3813 D3 3819 A3 3824 C3 7813 B2
2811 D2 3814 D3 3820 A3 7810 D3 7814 C2
2814 D3 3815 C2 3822 B2 7811 C3
3811 D3 3816 C2 3823 C3 7812 A2

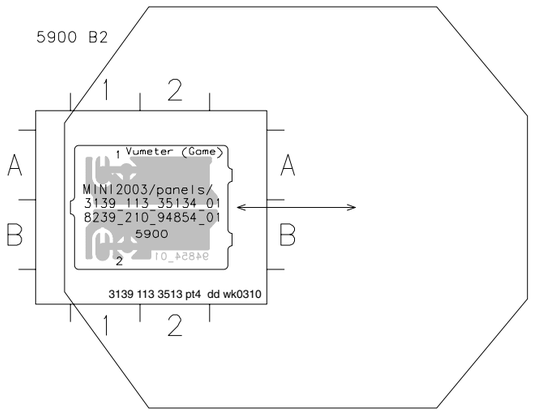

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
8239_210_94814_01
3139 113 3513 pt4 dd wk0310

VU METER (LEFT) BOARD - CIRCUIT DIAGRAM

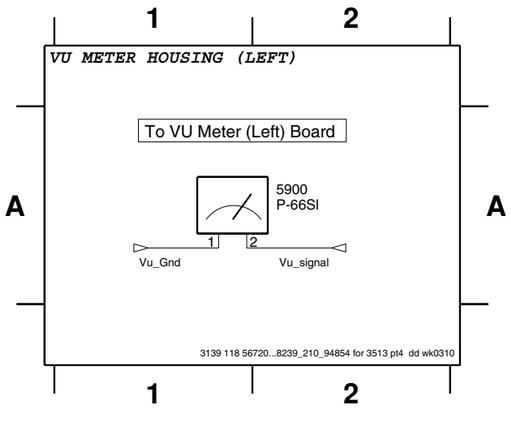
1810 C1 2811 D3 2814 D3 3813 D3 3816 B3 3819 B2 3822 A3 6812 A3 6815 D3 7812 B3
1811 D4 2812 C2 3811 C2 3814 D3 3817 B2 3820 B3 3823 A4 6813 A3 7810 C2 7813 B4
2810 D2 2813 A2 3812 D2 3815 C2 3818 B3 3821 A3 3824 A2 6814 A4 7811 A2 7814 B4



VU METER HOUSING (LEFT) BOARD - COMPONENT LAYOUT & CIRCUIT DIAGRAM

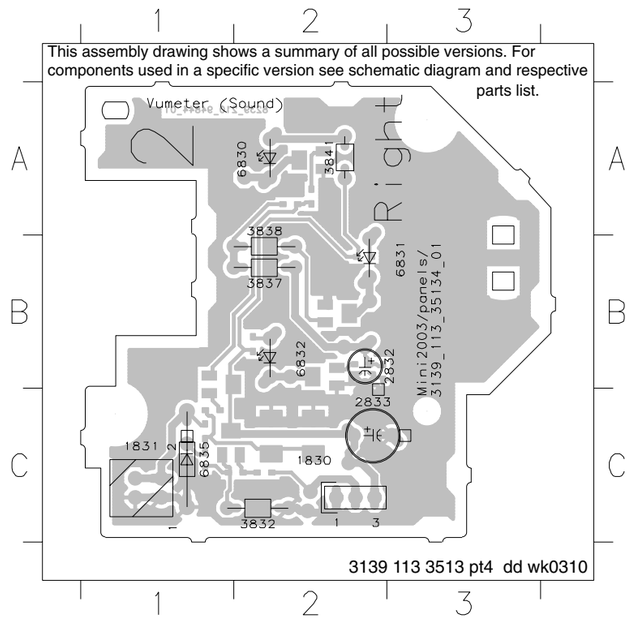


5900 A2



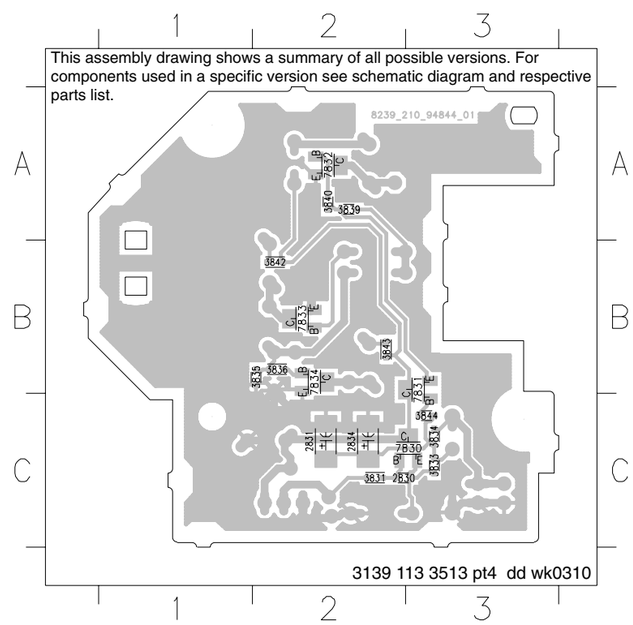
VU METER (RIGHT) BOARD - COMPONENT LAYOUT

1830 C2 2833 C2 3838 A2 6831 B3
1831 C1 3832 C2 3841 A2 6832 B2
2832 B3 3837 B2 6830 A2 6835 C1



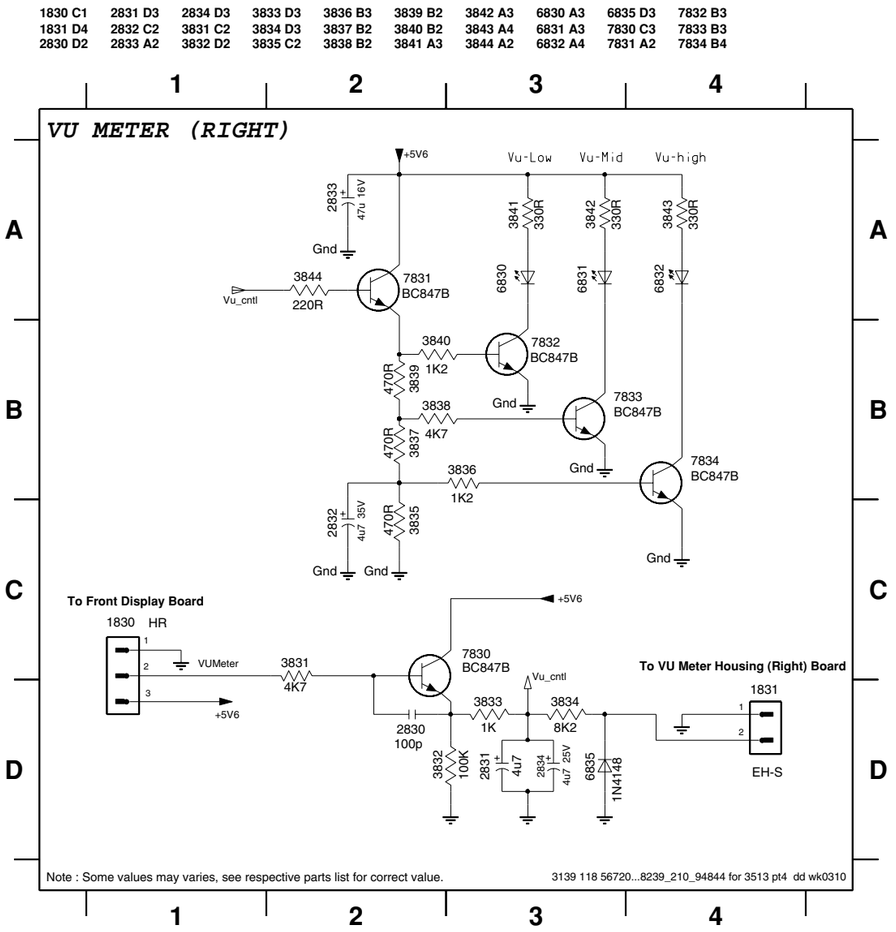
VU METER (RIGHT) BOARD - CHIP LAYOUT

2830 C2 3833 C3 3839 A2 3844 C3 7833 B2
2831 C2 3834 C3 3840 A2 7830 C3 7834 B2
2834 C2 3835 B2 3842 B2 7831 B3
3831 C2 3836 B2 3843 B2 7832 A2

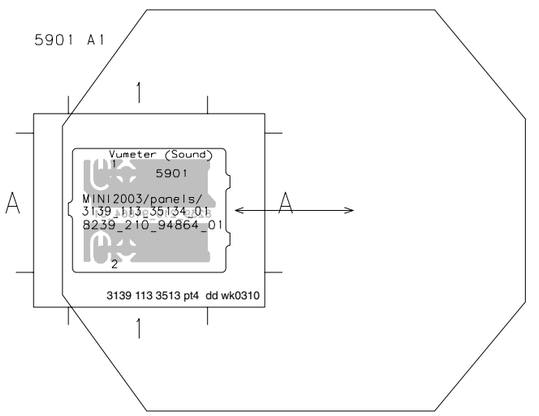

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
8239_210_94844_01
3139 113 3513 pt4 dd wk0310

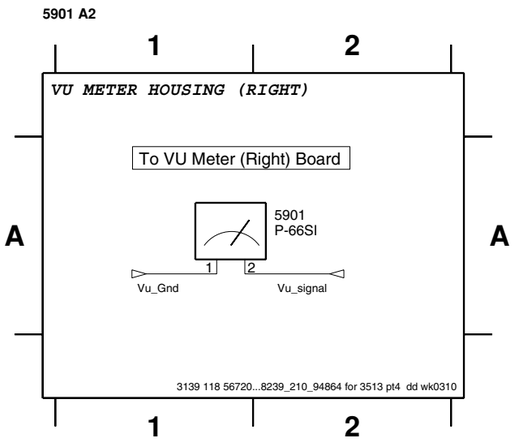
VU METER (RIGHT) BOARD - CIRCUIT DIAGRAM

1830 C1 2831 D3 2834 D3 3833 D3 3836 B3 3839 B2 3842 A3 6830 A3 6835 D3 7832 B3
1831 D4 2832 C2 3831 C2 3834 D3 3837 B2 3840 B2 3843 A4 6831 A3 7830 C3 7833 B3
2830 D2 2833 A2 3832 D2 3835 C2 3838 B2 3841 A3 3844 A2 6832 A4 7831 A2 7834 B4

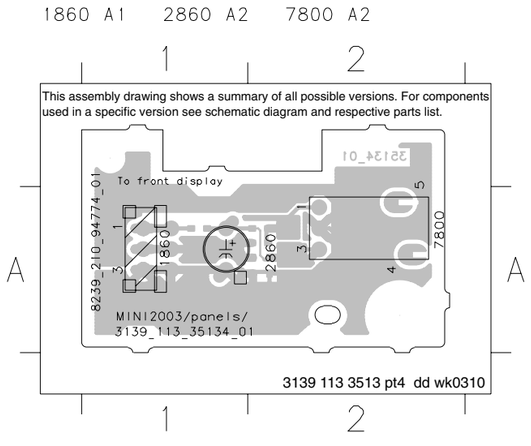


VU METER HOUSING (RIGHT) BOARD - COMPONENT LAYOUT & CIRCUIT DIAGRAM

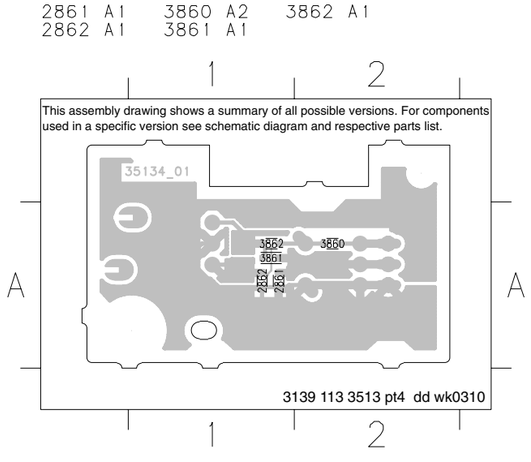




IR EYE BOARD - COMPONENT LAYOUT

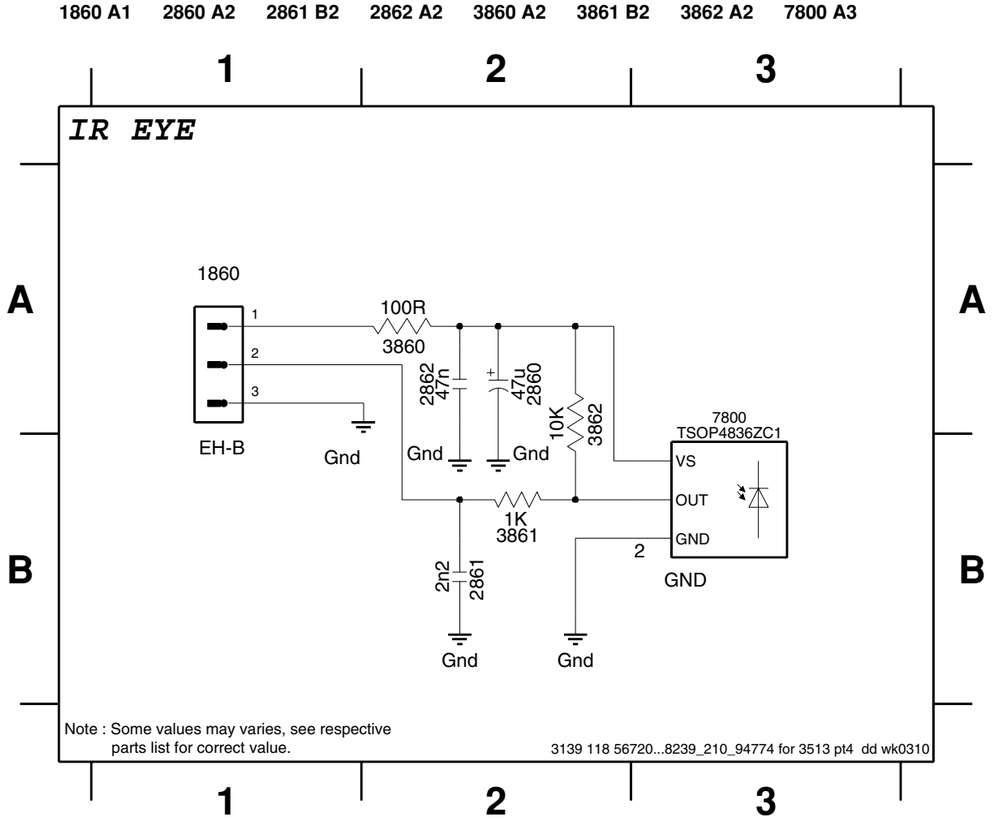

1860 A1 2860 A2 7800 A2
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
To front display
35134_01
8239_210_94774_01
1860
2860
7800
MINI2003/panels/
3139_113_35134_01
3139 113 3513 pt4 dd wk0310

IR EYE BOARD - CHIP LAYOUT

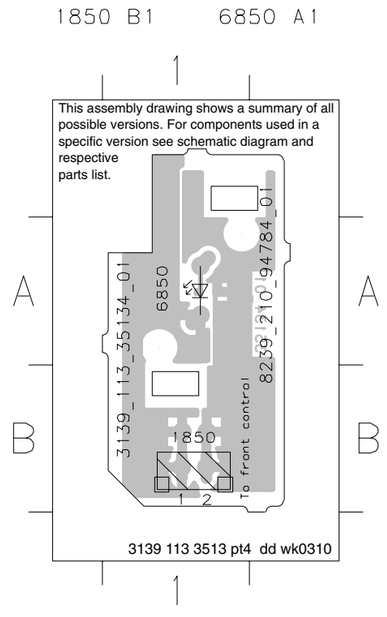

2861 A1 3860 A2 3862 A1
2862 A1 3861 A1
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
35134_01
3852
3861
3860
2862
2861
3139 113 3513 pt4 dd wk0310

IR EYE BOARD - CIRCUIT DIAGRAM

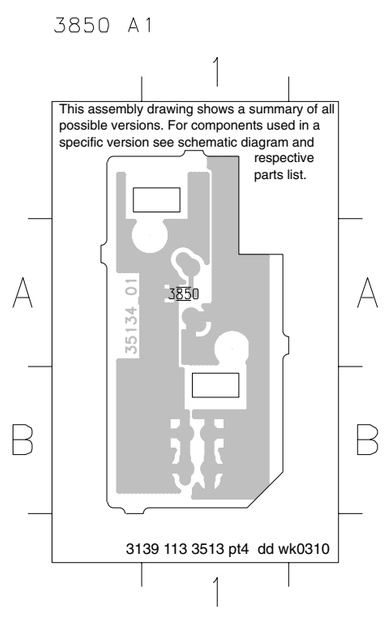
1860 A1 2860 A2 2861 B2 2862 A2 3860 A2 3861 B2 3862 A2 7800 A3



USB LED BOARD - COMPONENT LAYOUT

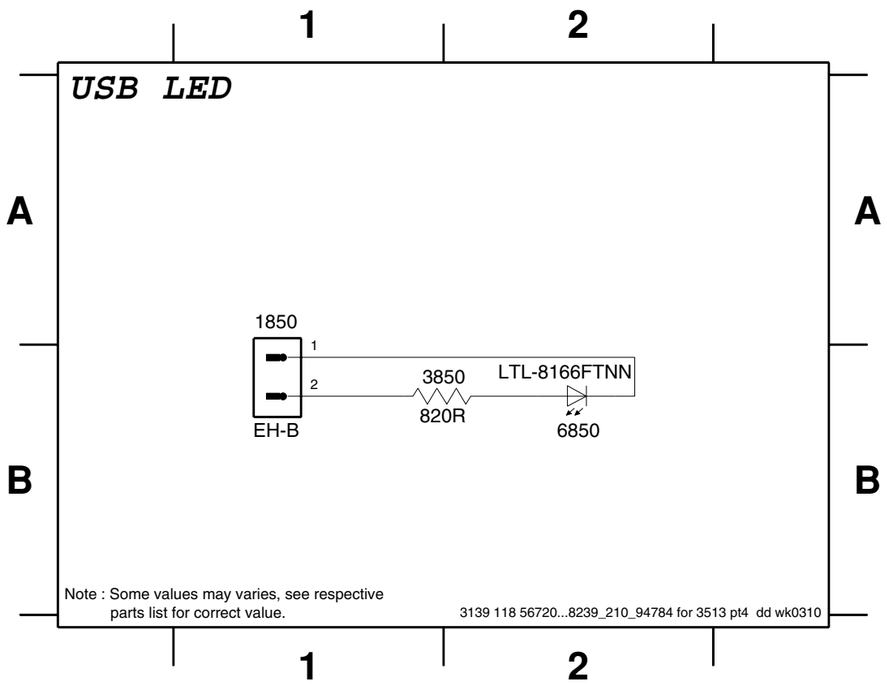

1850 B1 6850 A1
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
3139_113_35134_01
6850
8239_210_94784_01
To front control
1850
3139 113 3513 pt4 dd wk0310

USB LED BOARD - CHIP LAYOUT


3850 A1
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
35134_01
3850
3139 113 3513 pt4 dd wk0310

USB LED BOARD - CIRCUIT DIAGRAM

1850 A1 3850 B1 6850 B2



5-9

ELECTRICAL PARTS LIST - FRONT CONTROL BOARD

ELECTRICAL PARTS LIST - FRONT CONTROL BOARD

MISCELLANEOUS

1600	4822 265 11208	Flex Connector 10P
1602	4822 265 11535	Flex Connector 8P
1650	4822 276 13775	Tact Switch
1651	4822 276 13775	Tact Switch
1652	4822 276 13775	Tact Switch
1653	4822 276 13775	Tact Switch
1654	4822 276 13775	Tact Switch
1655	4822 276 13775	Tact Switch
1656	4822 276 13775	Tact Switch
1657	4822 276 13775	Tact Switch
1658	4822 276 13775	Tact Switch
1659	4822 276 13775	Tact Switch
1660	4822 276 13775	Tact Switch
1661	4822 276 13775	Tact Switch
1662	4822 276 13775	Tact Switch
1664	4822 276 13775	Tact Switch
1666	4822 276 13775	Tact Switch
1669	4822 276 13775	Tact Switch
1672	4822 276 13775	Tact Switch
1673	4822 276 13775	Tact Switch
1674	4822 276 13775	Tact Switch
1675	4822 276 13775	Tact Switch
1691	2422 129 16708	Rotary Encoder 24P
1692	4822 276 13775	Tact Switch
1840	4822 267 10733	Flex Connector 4P
1841	4822 265 11529	Headphone Socket
1880	4822 267 10958	Flex Connector 5P
1881	4822 276 13775	Tact Switch
1890	4822 265 10913	Cinch Socket - G/Port Audio R
1891	2422 026 05434	Cinch Socket - G/Port Audio L
1892	4822 267 31996	Cinch Socket - G/Port Video

CAPACITORS

2611	4822 124 41796	22uF 20% 16V
2612	4822 124 22726	4,7uF 35V
2614	4822 124 22726	4,7uF 35V
2616	5322 126 11578	1nF 10% 50V
2617	5322 126 11578	1nF 10% 50V
2620	4822 124 11947	10uF 20% 16V
2621	5322 126 11583	10nF 10% 50V
2622	5322 126 11583	10nF 10% 50V
2623	2020 552 94427	100pF 5% 50V
2624	2020 552 94427	100pF 5% 50V
2625	3198 016 31020	1nF 25V
2626	3198 016 31020	1nF 25V
2627	3198 016 31020	1nF 25V
2628	2238 586 59812	100nF +80/-20% 50V
2629	2238 586 59812	100nF +80/-20% 50V
2630	3198 016 31020	1nF 25V
2631	4822 126 13883	220pF 5% 50V
2632	4822 126 13883	220pF 5% 50V
2633	2020 552 94427	100pF 5% 50V
2634	2020 552 94427	100pF 5% 50V
2635	2020 552 94427	100pF 5% 50V
2636	2020 552 94427	100pF 5% 50V
2637	3198 016 38210	820pF 25V
2638	3198 016 38210	820pF 25V
2810	2020 552 94427	100pF 5% 50V
2811	4822 124 12312	4,7uF 20% 16V
2812	4822 124 22726	4,7uF 35V
2813	4822 124 81286	47uF 20% 16V
2814	4822 124 12312	4,7uF 20% 16V
2830	2020 552 94427	100pF 5% 50V
2831	4822 124 12312	4,7uF 20% 16V
2832	4822 124 22726	4,7uF 35V
2833	4822 124 81286	47uF 20% 16V
2834	4822 124 12312	4,7uF 20% 16V
2841	2238 916 15641	22nF 10% 25V
2843	2238 916 15641	22nF 10% 25V
2844	2238 586 59812	100nF +80/-20% 50V
2860	4822 124 40433	47uF 20% 25V
2861	4822 126 14238	2,2nF 50V
2862	3198 017 34730	47nF 16V
2880	4822 124 40769	4,7uF 20% 100V
2891	3198 016 36810	680pF 25V
2892	4822 126 13881	470pF 5% 50V
2894	3198 016 36810	680pF 25V
2895	4822 126 13881	470pF 5% 50V
2896	2020 552 94427	100pF 5% 50V
2897	2020 552 94427	100pF 5% 50V

RESISTORS

3628	4822 051 30102	1k 5% 0,062W
3629	4822 051 30102	1k 5% 0,062W
3630	4822 051 30221	220R 5% 0,062W
3637	4822 117 12925	47k 1% 0,063W
3647	4822 051 30471	470R 5% 0,062W
3651	4822 051 30102	1k 5% 0,062W
3652	4822 051 30102	1k 5% 0,062W
3653	4822 117 12925	47k 1% 0,063W
3655	4822 117 12925	47k 1% 0,063W
3656	4822 117 12925	47k 1% 0,063W
3657	4822 051 30472	4k7 5% 0,062W
3658	4822 051 30472	4k7 5% 0,062W
3659	4822 051 30472	4k7 5% 0,062W
3660	4822 101 11904	POTM 20KX2 20% 0,025W
3661	4822 051 30103	10k 5% 0,062W
3662	4822 051 30103	10k 5% 0,062W
3663	4822 051 30151	150R 5% 0,062W
3664	4822 051 30221	220R 5% 0,062W
3665	4822 051 30271	270R 5% 0,062W
3666	4822 051 30391	390R 5% 0,062W
3667	4822 051 30561	560R 5% 0,062W
3668	4822 117 12968	820R 5% 0,62W
3669	4822 117 11817	1k2 1% 1/16W
3670	4822 117 12903	1k8 1% 0,063W
3671	4822 051 30272	2k7 5% 0,062W
3672	4822 051 30472	4k7 5% 0,062W
3674	4822 051 30151	150R 5% 0,062W
3675	4822 051 30221	220R 5% 0,062W
3676	4822 051 30271	270R 5% 0,062W
3677	4822 051 30391	390R 5% 0,062W
3678	4822 051 30561	560R 5% 0,062W
3679	4822 117 12968	820R 5% 0,62W
3680	4822 117 11817	1k2 1% 1/16W
3681	4822 051 30272	2k7 5% 0,062W
3682	4822 051 30472	4k7 5% 0,062W
3683	4822 051 30102	1k 5% 0,062W
3684	4822 051 30102	1k 5% 0,062W
3685	4822 051 30222	2k2 5% 0,062W
3686	4822 051 30222	2k2 5% 0,062W
3689	4822 051 30472	4k7 5% 0,062W
3690	4822 051 30103	10k 5% 0,062W
3691	4822 051 30103	10k 5% 0,062W
3692	4822 051 30103	10k 5% 0,062W
3695	4822 051 30103	10k 5% 0,062W
3696	4822 051 30471	470R 5% 0,062W
3697	4822 051 30471	470R 5% 0,062W
3698	4822 051 30471	470R 5% 0,062W
3699	4822 051 30471	470R 5% 0,062W
3701	4822 051 30271	270R 5% 0,062W
3702	4822 051 30181	180R 5% 0,062W
3703	4822 051 30181	180R 5% 0,062W
3704	4822 051 30181	180R 5% 0,062W
3705	4822 051 30221	220R 5% 0,062W
3706	4822 051 30221	220R 5% 0,062W
3708	4822 117 12903	1k8 1% 0,063W
3709	4822 051 30472	4k7 5% 0,062W
3811	4822 051 30472	4k7 5% 0,062W
3812	4822 116 52234	100k 5% 0,5W
3813	4822 051 30102	1k 5% 0,062W
3814	4822 117 12902	8k2 1% 0,063W
3815	4822 051 30471	470R 5% 0,062W
3816	4822 117 11817	1k2 1% 1/16W
3817	4822 116 83883	470R 5% 0,5W
3818	4822 116 52283	4k7 5% 0,5W
3819	4822 051 30471	470R 5% 0,062W
3820	4822 117 11817	1k2 1% 1/16W
3821	4822 116 52219	330R 5% 0,5W
3822	4822 051 30331	330R 5% 0,062W
3823	4822 051 30331	330R 5% 0,062W
3824	4822 051 30221	220R 5% 0,062W
3831	4822 051 30472	4k7 5% 0,062W
3832	4822 116 52234	100k 5% 0,5W
3833	4822 051 30102	1k 5% 0,062W
3834	4822 117 12902	8k2 1% 0,063W
3835	4822 051 30471	470R 5% 0,062W
3836	4822 117 11817	1k2 1% 1/16W
3837	4822 116 83883	470R 5% 0,5W
3838	4822 116 52283	4k7 5% 0,5W
3839	4822 051 30471	470R 5% 0,062W
3840	4822 117 11817	1k2 1% 1/16W
3841	4822 116 52219	330R 5% 0,5W
3842	4822 051 30331	330R 5% 0,062W
3843	4822 051 30331	330R 5% 0,062W
3844	4822 051 30221	220R 5% 0,062W
3850	4822 117 12968	820R 5% 0,62W
3860	4822 051 30101	100R 5% 0,062W
3861	4822 051 30102	1k 5% 0,062W
3862	4822 051 30103	10k 5% 0,062W
3880	4822 117 12925	47k 1% 0,063W
3881	4822 117 12968	820R 5% 0,62W
3890	4822 051 30103	10k 5% 0,062W
3891	4822 050 21003	10k 1% 0,06W
3892	4822 117 11817	1k2 1% 1/16W
3893	4822 117 11817	1k2 1% 1/16W
4600	4822 051 30008	0R Jumper 0603
4610	4822 051 30008	0R Jumper 0603
4660	4822 051 30008	0R Jumper 0603
4661	4822 051 30008	0R Jumper 0603
4662	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5601	4822 157 62552	Coil 2,2uH 5%
5602	4822 157 62552	Coil 2,2uH 5%
5840	4822 157 62552	Coil 2,2uH 5%
5841	4822 157 62552	Coil 2,2uH 5%
5842	4822 157 62552	Coil 2,2uH 5%

DIODES

6620	4822 130 82978	LED VS LTL-1CHPE
6621	4822 130 82978	LED VS LTL-1CHPE
6622	4822 130 82978	LED VS LTL-1CHPE
6623	9322 178 87676	LED VS LTL-1CHTBK4-KA
6624	9322 178 87676	LED VS LTL-1CHTBK4-KA
6625	9322 178 87676	LED VS LTL-1CHTBK4-KA
6626	9322 191 85676	LED VS LTL816kETNN
6627	9322 191 85676	LED VS LTL816kETNN
6628	9322 191 85676	LED VS LTL816kETNN
6629	9322 191 85676	LED VS LTL816kETNN
6812	9322 178 15676	LED VS LTL-8166FTNN
6813	9322 178 15676	LED VS LTL-8166FTNN
6814	9322 191 85676	LED VS LTL816kETNN
6815	4822 130 30621	1N4148

5-10

ELECTRICAL PARTS LIST - FRONT CONTROL BOARD

DIODES

6830	9322 178 15676	LED VS LTL-8166FTNN
6831	9322 178 15676	LED VS LTL-8166FTNN
6832	9322 191 85676	LED VS LTL816kETNN
6835	4822 130 30621	1N4148
6850	9322 191 85676	LED VS LTL816kETNN
6880	4822 130 30621	1N4148
6881	9322 167 73676	LED VS LTL-4221NLC-KA

TRANSISTORS & INTEGRATED CIRCUITS

7601	4822 209 15449	74HC4094D
7602	5322 130 60159	BC847B
7603	5322 130 60159	BC847B
7604	5322 130 60159	BC847B
7605	5322 130 60159	BC847B
7606	4822 209 15449	74HC4094D
7607	4822 130 42804	BC817-25
7608	4822 130 42804	BC817-25
7609	4822 130 42804	BC817-25
7610	4822 130 42804	BC817-25
7650	5322 130 60159	BC847B
7800	9322 185 97667	IR Receiver TSOP4836ZC1
7810	5322 130 60159	BC847B
7811	5322 130 60159	BC847B
7812	5322 130 60159	BC847B
7813	5322 130 60159	BC847B
7814	5322 130 60159	BC847B
7830	5322 130 60159	BC847B
7831	5322 130 60159	BC847B
7832	5322 130 60159	BC847B
7833	5322 130 60159	BC847B
7834	5322 130 60159	BC847B
7880	4822 130 60373	BC857B

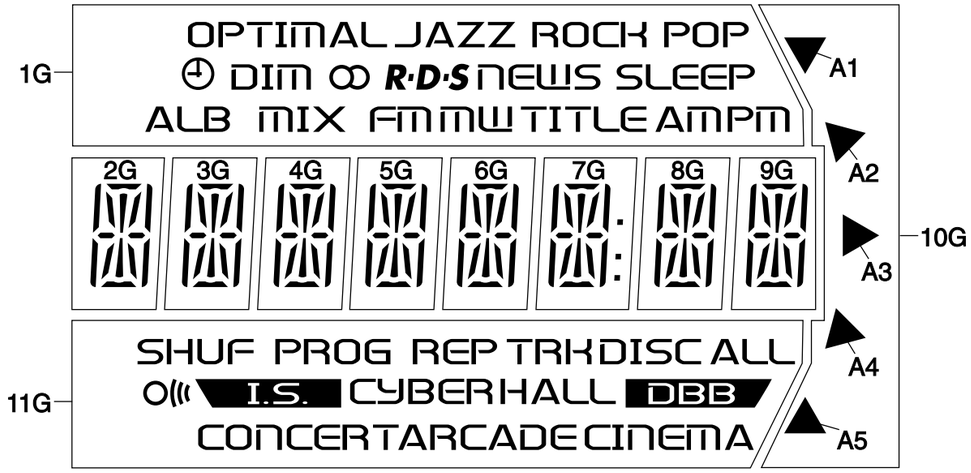
Note : Only the parts mentioned in this list are normal service spare parts.

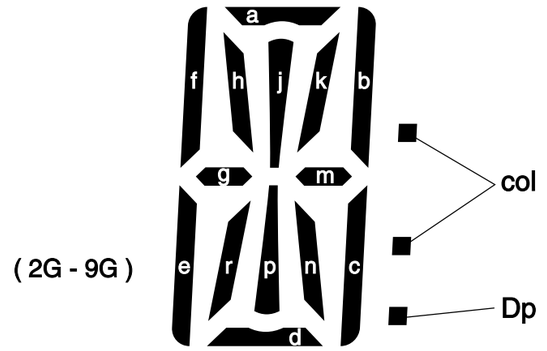
FRONT DISPLAY BOARD

TABLE OF CONTENTS

FTD Display Pin Connection 6-1
Display part - Component Layout 6-2
Display part - Chip Layout 6-3
Display part - Circuit Diagram 6-4
5DTC Key part - Layout & Circuit diagram 6-5
Electrical parts list 6-5

FTD DISPLAY PIN CONNECTION



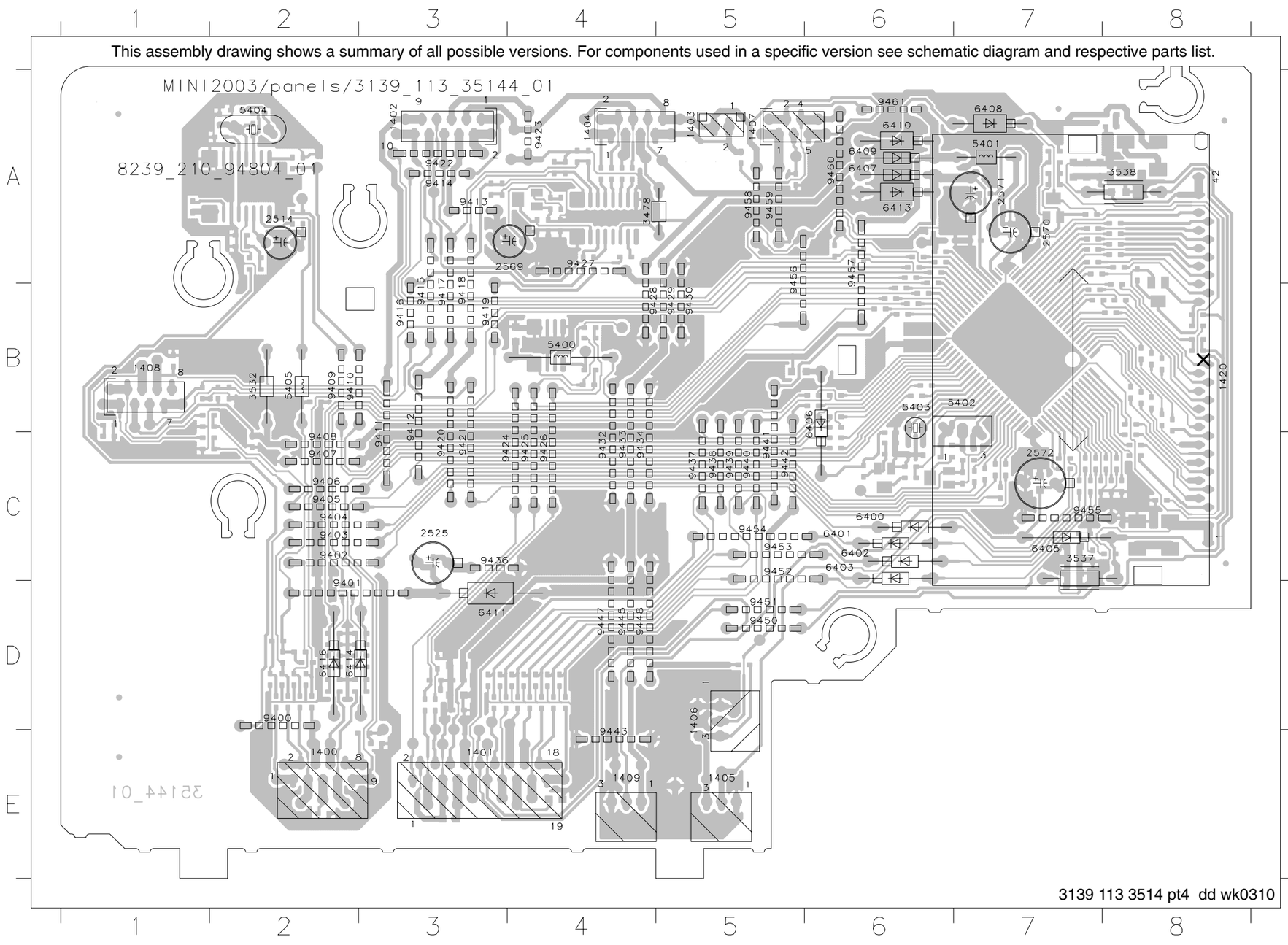


	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G
P1	OPTIMAL	a	a	a	a	a	a	a	a	A1	O((
P2	JAZZ	h	h	h	h	h	h	h	h	A2	SHUF
P3	ROCK	j , p	j , p	j , p	j , p	j , p	j , p	j , p	j , p	A3	PROG
P4	POP	k	k	k	k	k	k	k	k	A4	REP
P5	◴	b	b	b	b	b	b	b	b	A5	TRK
P6	DIM	f	f	f	f	f	f	f	f	-	DISC
P7	∞	m	m	m	m	m	m	m	m	-	ALL
P8	R·D·S	g	g	g	g	g	g	g	g	-	I.S.
P9	NEWS	c	c	c	c	c	c	c	c	-	CYBER
P10	SLEEP	e	e	e	e	e	e	e	e	-	HALL
P11	ALB	r	r	r	r	r	r	r	r	-	DBB
P12	MIX	n	n	n	n	n	n	n	n	-	CONCERT
P13	FM	d	d	d	d	d	d	d	d	-	ARCADE
P14	MW	-	-	-	-	-	col	-	-	-	CINEMA
P15	TITLE	-	-	-	-	-	Dp	-	-	-	-
P16	AM	-	-	-	-	-	-	-	-	-	-
P17	PM	-	-	-	-	-	-	-	-	-	-

6-2

DISPLAY BOARD - COMPONENT LAYOUT

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

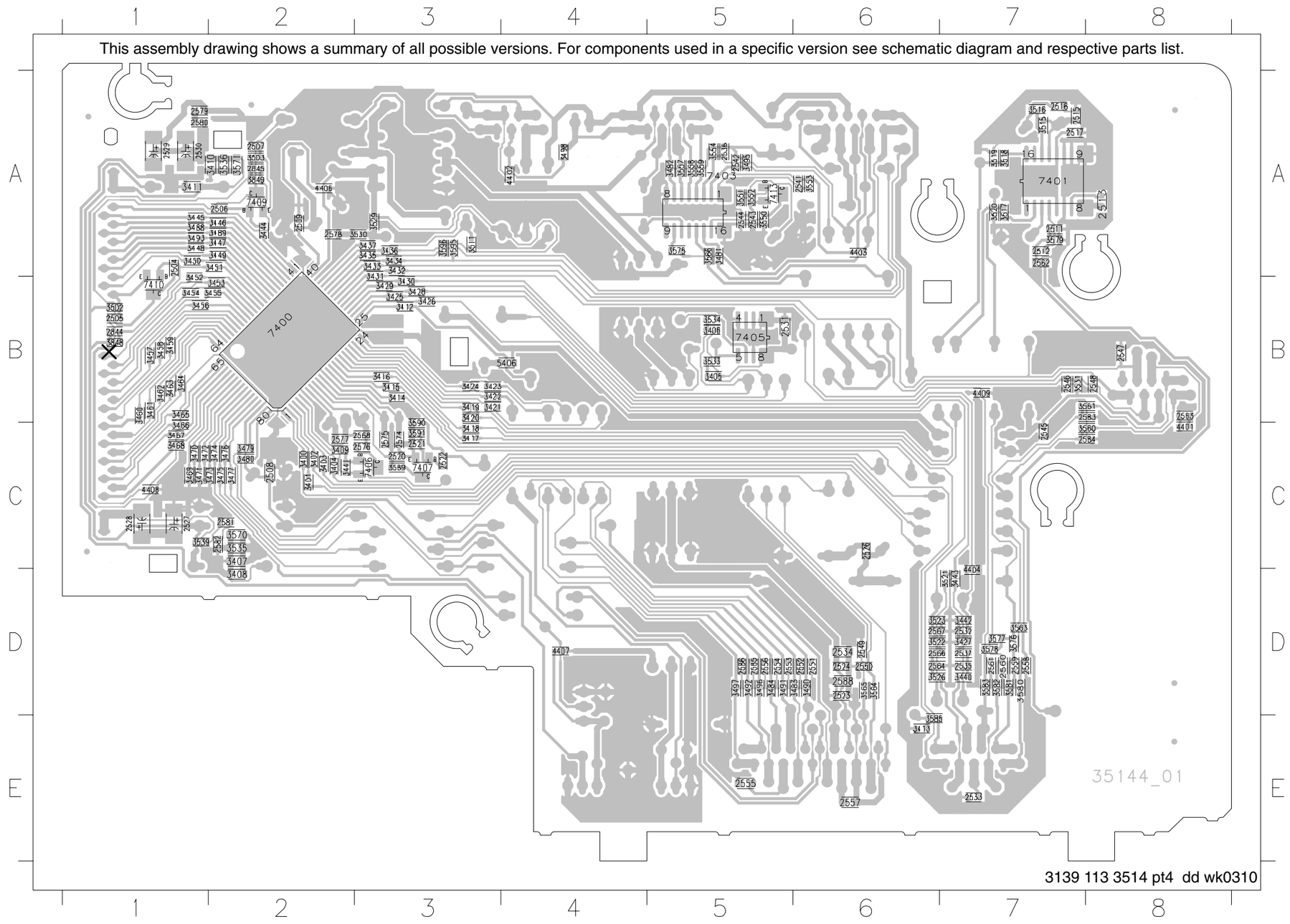


1400	E2	9428	B4	6402	C6
1401	E3	9429	B5	6403	C6
1402	A3	9430	B5	6405	C7
1403	A5	9432	C4	6406	B6
1404	A4	9433	C4	6407	A6
1405	E5	9434	C4	6408	A7
1406	D5	9436	C3	6409	A6
1407	A5	9437	C5	6410	A6
1408	B1	9438	C5	6411	D3
1409	E4	9439	C5	6413	A6
1420	B8	9440	C5	6414	D2
2514	A2	9441	C5	6416	D2
2525	C3	9442	C5	9400	D2
2569	A4	9443	E4	9401	D2
2570	A7	9445	D4	9402	C2
2571	A7	9447	D4	9403	C2
2572	C7	9448	D4	9404	C2
3478	A4	9450	D5	9405	C2
3532	B2	9451	D5	9406	C2
3537	C7	9452	C5	9407	C2
3538	A8	9453	C5	9408	C2
5400	B4	9454	C5	9409	B2
5401	A7	9455	C7	9410	B2
5402	B7	9456	A5	9411	C3
5403	B6	9457	A6	9412	B3
5404	A2	9458	A5	9413	A3
5405	B2	9459	A5	9414	A3
6400	C6	9460	A6	9415	B3
6401	C6	9461	A6	9416	B3
				9417	B3
				9418	B3
				9419	B3
				9420	C3
				9421	C3
				9422	A3
				9423	A4
				9424	C3
				9425	C4
				9426	C4
				9427	A4

6-3

DISPLAY BOARD - CHIP LAYOUT

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

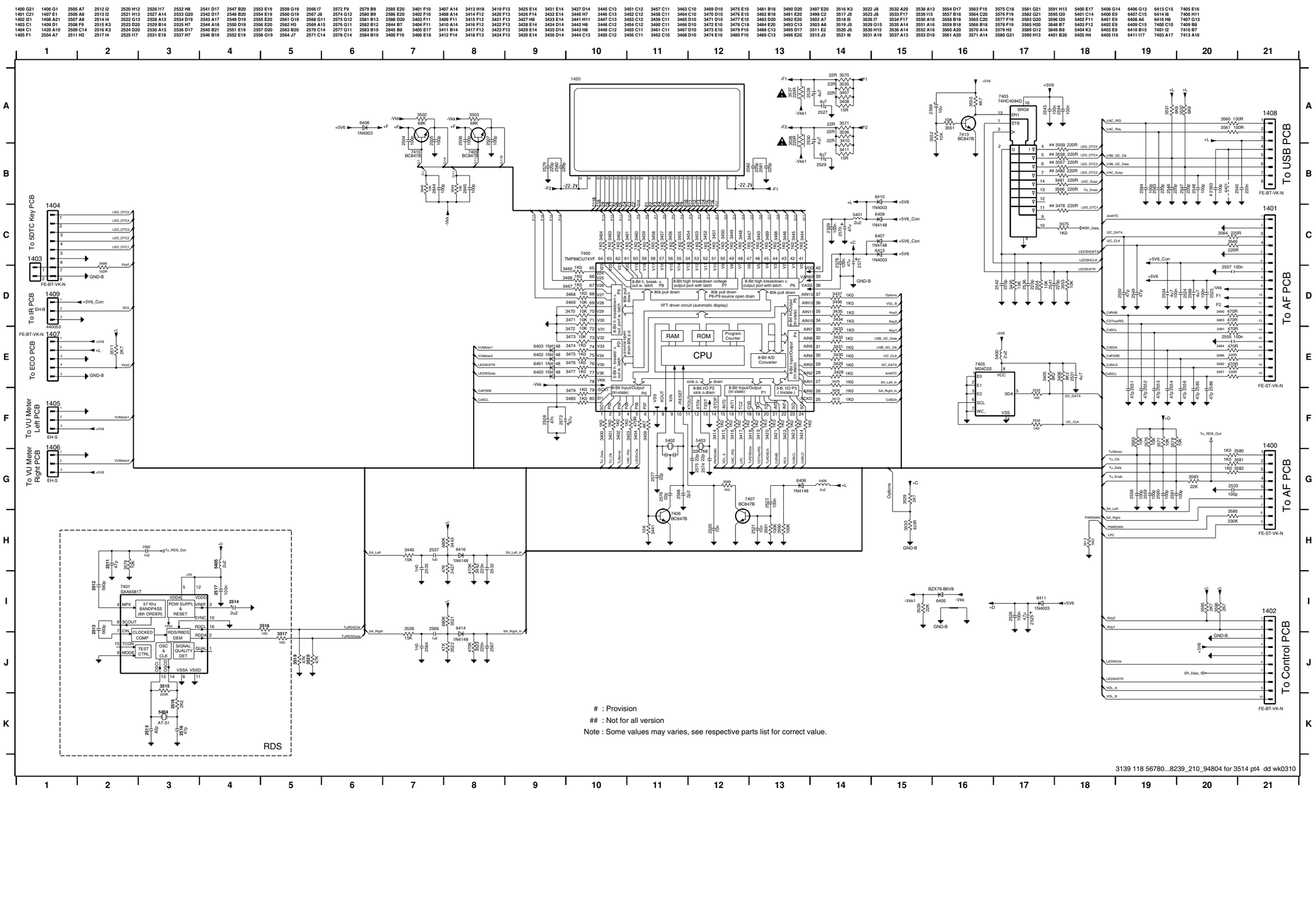


3139 113 3514 pt4 dd wk0310

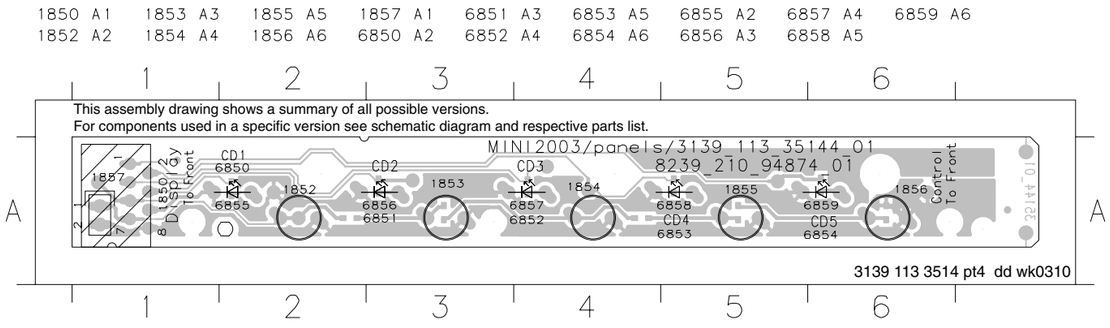
2504	A1	2588	D6	3468	C1	3581	D7
2505	B1	2844	B1	3469	C1	3582	D7
2506	A2	2845	A2	3470	C1	3583	D7
2507	A2	3400	C2	3471	C1	3585	E6
2508	C2	3401	C2	3472	C1	3589	C3
2509	A2	3402	C2	3473	C2	3590	C3
2511	A7	3403	C2	3474	C2	3591	C3
2512	A7	3404	C2	3475	C2	3595	A3
2513	A8	3405	B5	3476	C2	3596	A3
2515	A7	3406	B5	3477	C2	3848	B1
2516	A7	3407	C2	3479	C2	3849	A2
2517	A7	3408	D2	3480	C2	4401	C8
2520	C3	3409	C2	3481	A5	4402	A4
2521	C3	3410	A2	3482	A5	4403	A6
2522	C3	3411	A1	3483	D6	4404	D7
2523	D6	3412	B3	3484	D5	4406	A2
2524	D6	3413	E6	3488	A1	4407	D4
2526	C6	3414	B3	3489	A2	4408	C1
2527	C1	3415	B3	3490	D6	4409	B7
2528	C1	3416	B3	3491	D5	5406	B4
2529	A1	3417	C3	3492	D5	7400	B2
2530	A1	3418	C3	3493	A1	7401	A7
2531	B5	3419	B3	3495	A5	7403	A5
2532	D7	3420	B3	3496	D5	7405	B5
2533	E7	3421	B3	3497	D5	7406	C3
2534	D6	3422	B3	3498	A4	7407	C3
2535	D7	3423	B3	3502	B1	7409	A2
2536	A5	3424	B3	3503	A2	7410	B1
2537	D7	3425	B3	3511	A3	7413	A5
2541	A6	3426	B3	3515	A7		
2542	A5	3427	D7	3516	A7		
2543	A5	3428	B3	3517	A7		
2544	A5	3429	B3	3518	A7		
2545	C7	3430	B3	3519	A7		
2546	B7	3431	A3	3520	A7		
2547	B8	3432	A3	3521	D7		
2548	B8	3433	A3	3522	D6		
2549	D6	3434	A3	3523	D6		
2550	D6	3435	A3	3526	D6		
2551	D6	3436	A3	3529	A3		
2552	D6	3437	A3	3530	A3		
2553	D5	3440	D7	3531	B7		
2554	D5	3441	C2	3533	B5		
2555	E5	3442	D7	3534	B5		
2556	D5	3443	D7	3535	C2		
2557	E6	3444	A2	3536	A2		
2558	D7	3445	A1	3539	C1		
2559	D7	3446	A2	3550	A5		
2560	D7	3447	A2	3551	A5		
2561	D7	3448	A1	3552	A5		
2562	A7	3449	A2	3553	A6		
2563	B8	3450	A1	3554	A5		
2564	D6	3451	A2	3557	A5		
2566	D6	3452	B1	3558	A5		
2567	D6	3453	B2	3559	A5		
2568	C3	3454	B1	3560	C8		
2574	C3	3455	B2	3561	B8		
2575	C3	3456	B1	3563	D7		
2576	C3	3457	B1	3564	D6		
2577	C2	3458	B1	3565	D6		
2578	A2	3459	B1	3566	A5		
2579	A1	3460	B1	3570	C2		
2580	A1	3461	B1	3571	A2		
2581	C2	3462	B1	3575	A5		
2582	C2	3463	B1	3576	D7		
2583	B8	3464	B1	3577	D7		
2584	C8	3465	B1	3578	D7		
2585	D5	3466	C1	3579	A7		
2586	D5	3467	C1	3580	D7		

6-4

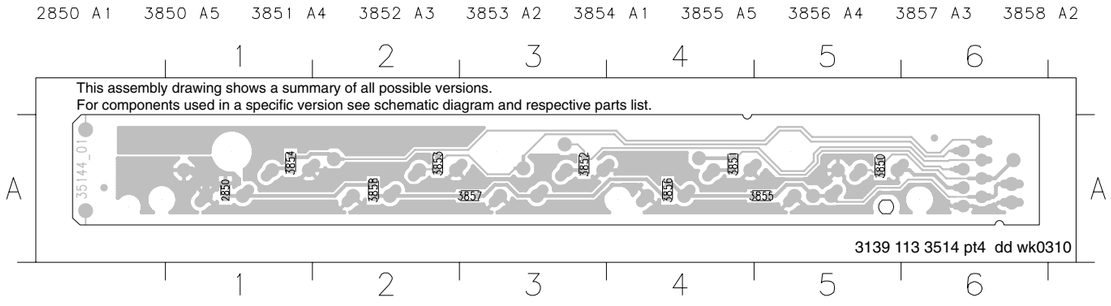
DISPLAY BOARD - CIRCUIT DIAGRAM



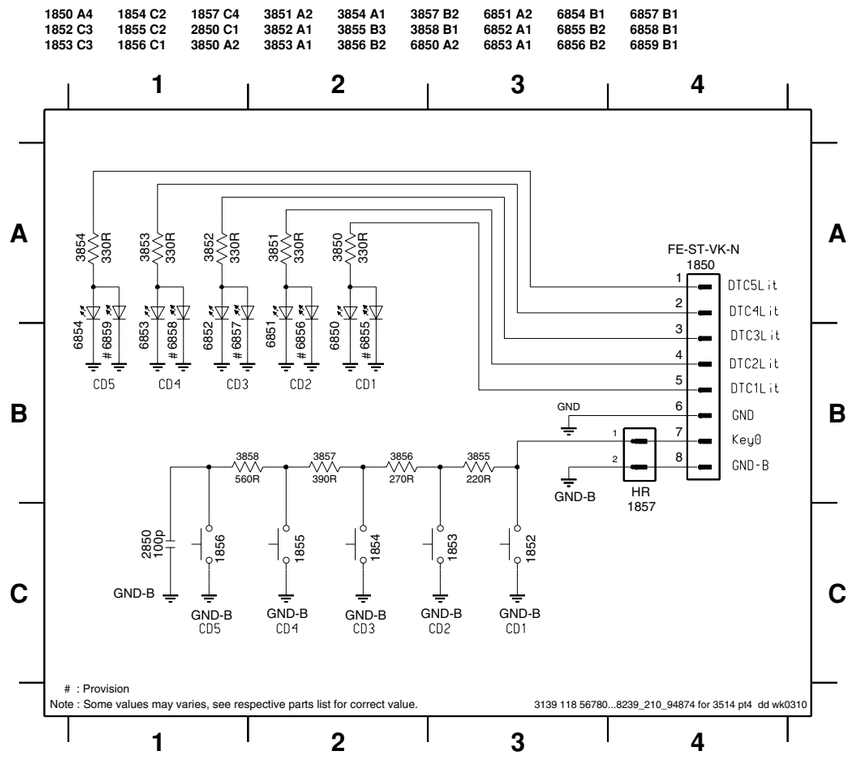
5DTC KEY BOARD - COMPONENT LAYOUT



5DTC KEY BOARD - CHIP LAYOUT


2850 A1 3850 A5 3851 A4 3852 A3 3853 A2 3854 A1 3855 A5 3856 A4 3857 A3 3858 A2
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
35144_01
3139 113 3514 pt4 dd wk0310

5DTC KEY BOARD - CIRCUIT DIAGRAM



ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD

MISCELLANEOUS

1400	4822 265 11531	Flex Connector 9P	
1401	4822 265 11545	Flex Connector 19P	
1402	4822 267 10729	Flex Connector 10P	
1404	4822 265 11515	Flex Connector 8P	
1407	4822 267 10954	Flex Connector 5P	
1408	4822 265 11515	Flex Connector 8P	
1420	3139 110 53411	FTD (BJ902GNK)	
1850	4822 265 11535	Flex Connector 8P	
1852	4822 276 13775	Tact Switch	
1853	4822 276 13775	Tact Switch	
1854	4822 276 13775	Tact Switch	
1855	4822 276 13775	Tact Switch	
1856	4822 276 13775	Tact Switch	

CAPACITORS

2504	2020 552 94427	100pF 5% 50V	
2505	2020 552 94427	100pF 5% 50V	
2506	2020 552 94427	100pF 5% 50V	
2507	2020 552 94427	100pF 5% 50V	
2508	3198 024 44730	47nF 50V	
2509	2238 586 59812	100nF +80/-20% 50V	
2511	4822 126 11785	47pF 5% 50V	/22
2512	4822 126 14249	560pF 10% 50V	/22
2513	4822 126 14249	560pF 10% 50V	/22
2514	4822 124 22652	2,2uF 20% 50V	/22
2515	4822 126 14226	82pF 5% 50V	/22
2516	4822 126 11785	47pF 5% 50V	/22
2517	2238 586 59812	100nF +80/-20% 50V	/22
2520	5322 126 11583	10nF 10% 50V	
2521	5322 126 11583	10nF 10% 50V	
2522	2238 586 59812	100nF +80/-20% 50V	
2523	2238 586 59812	100nF +80/-20% 50V	
2524	2238 586 59812	100nF +80/-20% 50V	
2525	4822 124 12233	47uF 20% 25V	
2526	2238 586 59812	100nF +80/-20% 50V	
2527	4822 124 12312	4,7uF 20% 16V	
2528	4822 124 12312	4,7uF 20% 16V	
2529	4822 124 12312	4,7uF 20% 16V	
2530	4822 124 12312	4,7uF 20% 16V	
2531	2020 552 96305	4,7uF +80/-20% 10V	
2532	4822 126 13879	220nF +80/-20% 16V	
2533	2020 552 94427	100pF 5% 50V	
2534	2020 552 96305	4,7uF +80/-20% 10V	
2535	5322 126 11578	1nF 10% 50V	
2536	4822 126 13883	220pF 5% 50V	
2537	3198 017 41050	1uF 10V	
2541	4822 126 13883	220pF 5% 50V	
2542	4822 126 13883	220pF 5% 50V	
2543	2238 586 59812	100nF +80/-20% 50V	
2544	2238 586 59812	100nF +80/-20% 50V	
2545	4822 126 13879	220nF +80/-20% 16V	
2546	4822 126 13883	220pF 5% 50V	
2547	4822 126 13883	220pF 5% 50V	
2548	2020 552 94427	100pF 5% 50V	
2549	4822 126 11785	47pF 5% 50V	
2550	4822 126 11785	47pF 5% 50V	
2551	4822 126 11785	47pF 5% 50V	
2552	4822 126 11785	47pF 5% 50V	
2553	4822 126 11785	47pF 5% 50V	
2554	4822 126 11785	47pF 5% 50V	
2555	2238 586 59812	100nF +80/-20% 50V	
2556	4822 126 11785	47pF 5% 50V	
2557	2238 586 59812	100nF +80/-20% 50V	
2558	2020 552 94427	100pF 5% 50V	
2559	2020 552 94427	100pF 5% 50V	
2560	2020 552 94427	100pF 5% 50V	
2561	2020 552 94427	100pF 5% 50V	
2562	3198 016 31020	1nF 25V	/22
2564	5322 126 11578	1nF 10% 50V	
2566	3198 017 41050	1uF 10V	
2567	4822 126 13879	220nF +80/-20% 16V	
2568	4822 126 14223	2,2pF 50V	
2569	4822 124 40248	10uF 20% 63V	
2570	4822 124 12233	47uF 20% 25V	
2571	4822 124 12233	47uF 20% 25V	
2572	3198 028 44790	47uF 20% 35V	
2574	4822 122 33761	22pF 5% 50V	
2575	4822 122 33761	22pF 5% 50V	
2576	4822 122 33761	22pF 5% 50V	
2577	4822 122 33761	22pF 5% 50V	
2578	2238 586 59812	100nF +80/-20% 50V	
2579	4822 126 13883	220pF 5% 50V	
2580	4822 126 13883	220pF 5% 50V	
2581	4822 126 13883	220pF 5% 50V	
2582	4822 126 13883	220pF 5% 50V	
2583	4822 126 13883	220pF 5% 50V	
2584	2020 552 94427	100pF 5% 50V	
2585	4822 126 11785	47pF 5% 50V	
2586	4822 126 11785	47pF 5% 50V	
2588	2020 552 96305	4,7uF +80/-20% 10V	
2844	2020 552 94427	100pF 5% 50V	
2845	2020 552 94427	100pF 5% 50V	
2850	2020 552 94427	100pF 5% 50V	

RESISTORS

3400	4822 051 30102	1k 5% 0,062W
3401	4822 051 30102	1k 5% 0,062W
3402	4822 051 30102	1k 5% 0,062W
3403	4822 051 30102	1k 5% 0,062W
3404	4822 051 30471	470R 5% 0,062W
3405	4822 117 12902	8k2 1% 0,063W
3406	4822 117 12902	8k2 1% 0,063W
3407	4822 051 20229	22R 5% 0,1W
3408	4822 051 20159	15R 5% 0,1W

6-6

ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD

ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD

RESISTORS

3409	4822 051 30472	4k7 5% 0,062W	3463	4822 051 30102	1k 5% 0,062W		3535	4822 051 20229	22R 5% 0,1W		4407	4822 051 30008	0R Jumper 0603	
3410	4822 051 20229	22R 5% 0,1W	3464	4822 051 30102	1k 5% 0,062W		3536	4822 051 20229	22R 5% 0,1W		4408	4822 051 30008	0R Jumper 0603	
3411	4822 051 20159	15R 5% 0,1W	3465	4822 051 30102	1k 5% 0,062W		3537	4822 052 10221	⚠ 220R 5% 0,33W		4409	4822 051 30008	0R Jumper 0603	
3412	4822 051 30102	1k 5% 0,062W	3466	4822 051 30102	1k 5% 0,062W		3538	4822 052 10221	⚠ 220R 5% 0,33W					
3413	4822 051 30105	1M 5% 0,062W	3467	4822 051 30102	1k 5% 0,062W		3539	4822 051 30223	22k 5% 0,062W					
3414	4822 051 30102	1k 5% 0,062W	3468	4822 051 30102	1k 5% 0,062W		3550	4822 051 30472	4k7 5% 0,062W					
3415	4822 051 30102	1k 5% 0,062W	3469	4822 051 30103	10k 5% 0,062W		3551	4822 051 30103	10k 5% 0,062W					
3416	4822 051 30102	1k 5% 0,062W	3470	4822 051 30103	10k 5% 0,062W		3552	4822 051 30103	10k 5% 0,062W					
3417	4822 051 30102	1k 5% 0,062W	3471	4822 051 30103	10k 5% 0,062W		3553	4822 051 30103	10k 5% 0,062W					
3418	4822 051 30102	1k 5% 0,062W	3472	4822 051 30103	10k 5% 0,062W		3554	4822 051 30103	10k 5% 0,062W					
3419	4822 051 30102	1k 5% 0,062W	3473	4822 051 30103	10k 5% 0,062W		3557	4822 051 30221	220R 5% 0,062W					
3420	4822 051 30102	1k 5% 0,062W	3474	4822 051 30102	1k 5% 0,062W		3558	4822 051 30221	220R 5% 0,062W					
3421	4822 051 30102	1k 5% 0,062W	3475	4822 051 30102	1k 5% 0,062W		3559	4822 051 30221	220R 5% 0,062W					
3422	4822 051 30102	1k 5% 0,062W	3476	4822 051 30102	1k 5% 0,062W		3560	4822 051 30101	100R 5% 0,062W					
3423	4822 051 30102	1k 5% 0,062W	3477	4822 051 30102	1k 5% 0,062W		3561	4822 051 30101	100R 5% 0,062W					
3424	4822 051 30102	1k 5% 0,062W	3478	4822 116 83872	220R 5% 0,5W		3563	4822 051 30103	10k 5% 0,062W					
3425	4822 051 30102	1k 5% 0,062W	3479	4822 051 30102	1k 5% 0,062W		3564	4822 051 30221	220R 5% 0,062W					
3426	4822 051 30102	1k 5% 0,062W	3480	4822 051 30102	1k 5% 0,062W		3565	4822 051 30221	220R 5% 0,062W					
3427	4822 117 12925	47k 1% 0,063W	3481	4822 051 30221	220R 5% 0,062W		3566	4822 051 30221	220R 5% 0,062W					
3428	4822 051 30102	1k 5% 0,062W	3482	4822 051 30221	220R 5% 0,062W		3570	4822 051 20229	22R 5% 0,1W					
3429	4822 051 30102	1k 5% 0,062W	3483	4822 051 30471	470R 5% 0,062W		3571	4822 051 20229	22R 5% 0,1W					
3430	4822 051 30102	1k 5% 0,062W	3484	4822 051 30471	470R 5% 0,062W		3575	4822 051 30102	1k 5% 0,062W					
3431	4822 051 30102	1k 5% 0,062W	3488	4822 051 30102	1k 5% 0,062W		3576	4822 051 30103	10k 5% 0,062W					
3432	4822 051 30102	1k 5% 0,062W	3489	4822 051 30102	1k 5% 0,062W		3577	4822 051 30103	10k 5% 0,062W					
3433	4822 051 30102	1k 5% 0,062W	3490	4822 051 30471	470R 5% 0,062W		3578	4822 051 30103	10k 5% 0,062W		6411	4822 130 31878	1N4003G	
3434	4822 051 30102	1k 5% 0,062W	3491	4822 051 30471	470R 5% 0,062W		3579	4822 051 30103	10k 5% 0,062W	/22	6413	4822 130 31878	1N4003G	
3435	4822 051 30102	1k 5% 0,062W	3492	4822 051 30471	470R 5% 0,062W		3580	4822 051 30102	1k 5% 0,062W		6414	4822 130 30621	1N4148	
3436	4822 051 30102	1k 5% 0,062W	3493	4822 051 30102	1k 5% 0,062W		3581	4822 051 30102	1k 5% 0,062W		6416	4822 130 30621	1N4148	
3437	4822 051 30102	1k 5% 0,062W	3495	4822 051 30103	10k 5% 0,062W		3582	4822 051 30102	1k 5% 0,062W		6855	9322 191 85676	LED VS LTL816KETNN	
3440	4822 051 30153	15k 5% 0,062W	3496	4822 051 30221	220R 5% 0,062W		3583	4822 051 30223	22k 5% 0,062W		6856	9322 191 85676	LED VS LTL816KETNN	
3441	4822 051 30103	10k 5% 0,062W	3497	4822 051 30221	220R 5% 0,062W		3585	4822 051 30334	330k 5% 0,062W		6857	9322 191 85676	LED VS LTL816KETNN	
3442	4822 051 30474	470k 5% 0,062W	3498	4822 051 30151	150R 5% 0,062W		3589	4822 051 30102	1k 5% 0,062W		6858	9322 191 85676	LED VS LTL816KETNN	
3443	4822 051 30684	680k 5% 0,062W	3502	4822 051 30683	68k 5% 0,062W		3590	4822 117 13632	100k 1% 0,62W		6859	9322 191 85676	LED VS LTL816KETNN	
3444	4822 051 30102	1k 5% 0,062W	3503	4822 051 30683	68k 5% 0,062W		3591	4822 117 13632	100k 1% 0,62W					
3445	4822 051 30102	1k 5% 0,062W	3511	4822 051 30272	2k7 5% 0,062W		3595	4822 051 30272	2k7 5% 0,062W					
3446	4822 051 30102	1k 5% 0,062W	3515	4822 117 12891	220k 1%	/22	3596	4822 051 30272	2k7 5% 0,062W					
3447	4822 051 30102	1k 5% 0,062W	3516	4822 051 30222	2k2 5% 0,062W	/22	3848	4822 051 30103	10k 5% 0,062W					
3448	4822 051 30102	1k 5% 0,062W	3517	4822 051 30102	1k 5% 0,062W	/22	3849	4822 051 30103	10k 5% 0,062W					
3449	4822 051 30102	1k 5% 0,062W	3518	4822 051 30102	1k 5% 0,062W	/22	3850	4822 051 30331	330R 5% 0,062W					
3450	4822 051 30102	1k 5% 0,062W	3519	4822 117 12925	47k 1% 0,063W	/21	3851	4822 051 30331	330R 5% 0,062W					
3451	4822 051 30102	1k 5% 0,062W	3520	4822 117 12925	47k 1% 0,063W	/21	3852	4822 051 30331	330R 5% 0,062W					
3452	4822 051 30102	1k 5% 0,062W	3521	4822 051 30684	680k 5% 0,062W		3853	4822 051 30331	330R 5% 0,062W					
3453	4822 051 30102	1k 5% 0,062W	3522	4822 117 12925	47k 1% 0,063W		3854	4822 051 30331	330R 5% 0,062W					
3454	4822 051 30102	1k 5% 0,062W	3523	4822 051 30474	470k 5% 0,062W		3855	4822 051 30221	220R 5% 0,062W					
3455	4822 051 30102	1k 5% 0,062W	3526	4822 051 30153	15k 5% 0,062W		3856	4822 051 30271	270R 5% 0,062W					
3456	4822 051 30102	1k 5% 0,062W	3529	4822 051 30272	2k7 5% 0,062W		3857	4822 051 30391	390R 5% 0,062W					
3457	4822 051 30102	1k 5% 0,062W	3530	4822 117 11817	1k2 1% 1/16W	/21	3858	4822 051 30561	560R 5% 0,062W					
3458	4822 051 30102	1k 5% 0,062W	3530	4822 117 12903	1k8 1% 0,063W	/22	4401	4822 051 30008	0R Jumper 0603					
3459	4822 051 30102	1k 5% 0,062W	3531	4822 051 30682	6k8 5% 0,062W		4402	4822 051 30008	0R Jumper 0603					
3460	4822 051 30102	1k 5% 0,062W	3532	4822 116 83961	6k8 5%		4403	4822 051 30008	0R Jumper 0603					
3461	4822 051 30102	1k 5% 0,062W	3533	4822 051 30102	1k 5% 0,062W		4404	4822 051 30008	0R Jumper 0603					
3462	4822 051 30102	1k 5% 0,062W	3534	4822 051 30102	1k 5% 0,062W		4406	4822 051 30008	0R Jumper 0603					

COILS & FILTERS

5400	4822 157 62552	Coil 2,2uH 5%	
5401	4822 157 62552	Coil 2,2uH 5%	
5402	5322 242 73686	RES CER 12MHz	
5403	4822 242 70938	RES XTL 32,768kHz	
5404	4822 242 11033	RES XTL 4,332MHz	/22
5405	4822 157 62552	Coil 2,2uH 5%	/22
5406	4822 157 10586	Coil 2,2uH 10%	

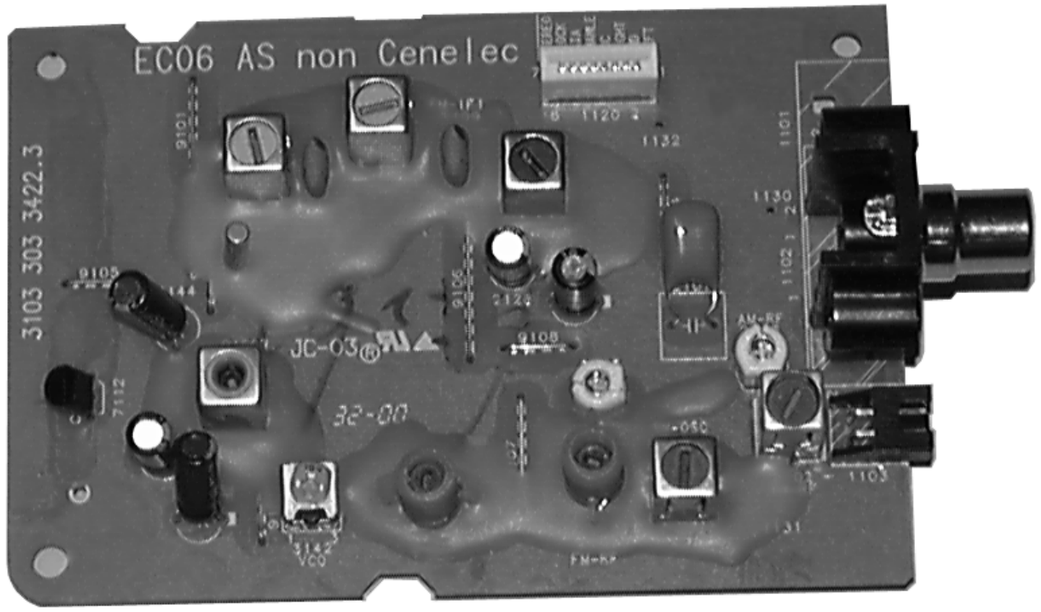
DIODES

6400	4822 130 30621	1N4148	
6401	4822 130 30621	1N4148	
6402	4822 130 30621	1N4148	
6403	4822 130 30621	1N4148	
6405	4822 130 34278	BZX79-B6V8	
6406	4822 130 30621	1N4148	
6407	4822 130 30621	1N4148	
6408	4822 130 31878	1N4003G	
6409	4822 130 30621	1N4148	
6410	4822 130 31878	1N4003G	

TRANSISTORS & INTEGRATED CIRCUITS

7400	3139 110 53341	TMP88CU74YF - 'M5/7S53341'	
7401	9352 686 05118	SAA6581T	/22
7403	4822 209 15449	74HC4094D	
7405	9322 145 26668	M24C02-WMN6	
7406	5322 130 60159	BC847B	
7407	5322 130 60159	BC847B	
7409	5322 130 60159	BC847B	
7410	5322 130 60159	BC847B	
7413	5322 130 60159	BC847B	

Note : Only the parts mentioned in this list are normal service spare parts.



ECO6 Tuner Board

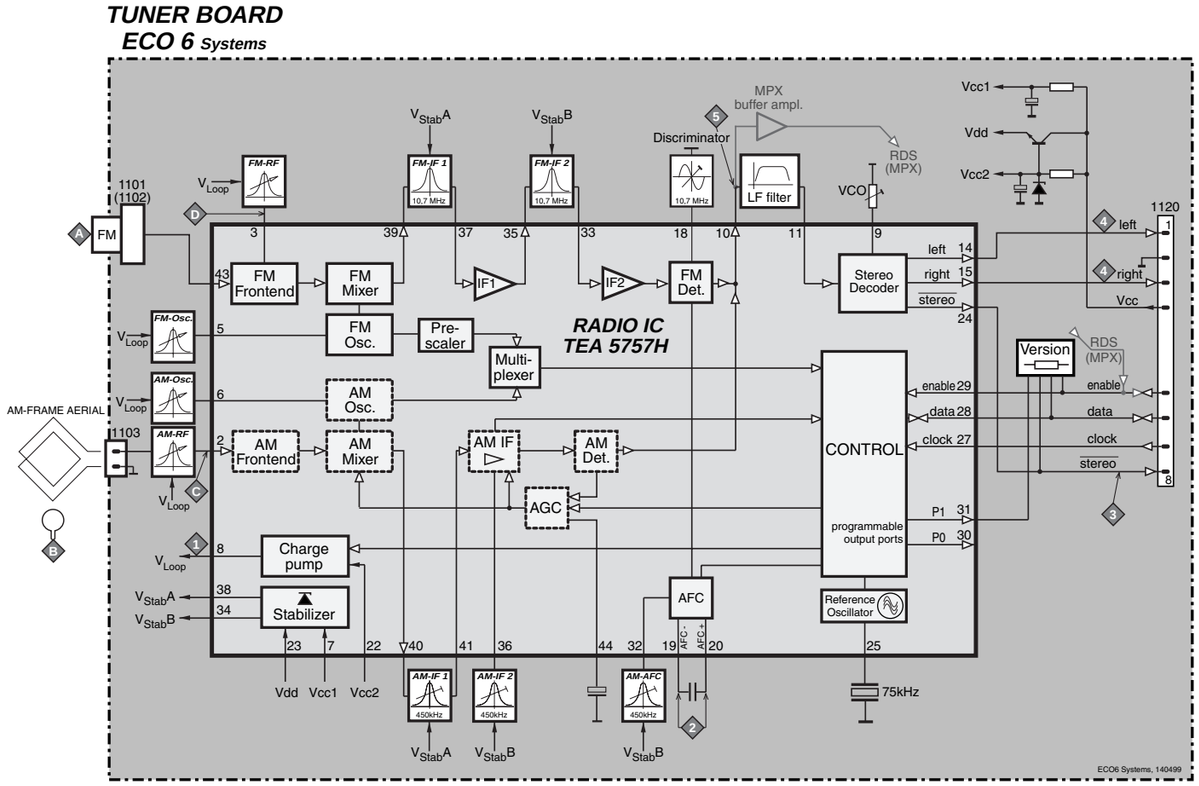
version: ***SYSTEMS non-CENELEC***

TABLE OF CONTENTS

Blockdiagram 7A-1
Schematic Diagram.....7A-2
Component Layout.....7A-3
Adjustment table 7A-3
Electrical Partslist.....7A-4

7A-1

BLOCK DIAGRAM



7A-2

TUNER BOARD ECO6 / SYSTEMS NON CENELEC

VERSION PROGRAMMING COMPONENTS

VERSION	6120	3156	3157	3170	7111
/00 /02 FM/MW/LW	☒				
/00 /02 FM/MW		☒			☒
/01 FM/MW			☒		
/14 FM-OIRT/MW	☒				
/17 FM/AM		☒			☒
/06 FM-Japan/AM			☒	☒	

☒ component mounted

VERSION DETECTION

LEGEND

ⓟ...for provision only
USA ... for USA version only
E-EU ... for East European version only
J ... for Japanese version only

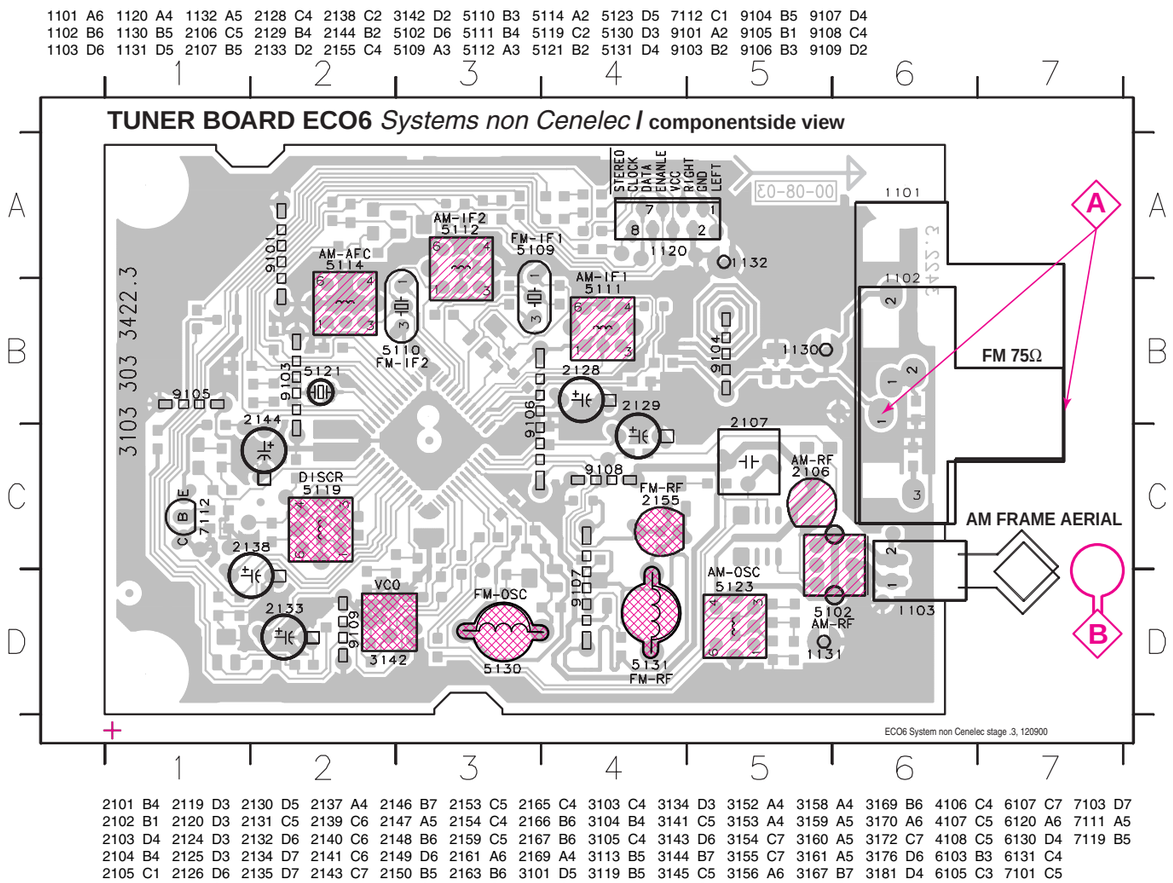
...V FM mode stereo
...V MW mode
...V LW mode
Ⓥ EVM
voltages measured while set is tuned to a strong transmitter

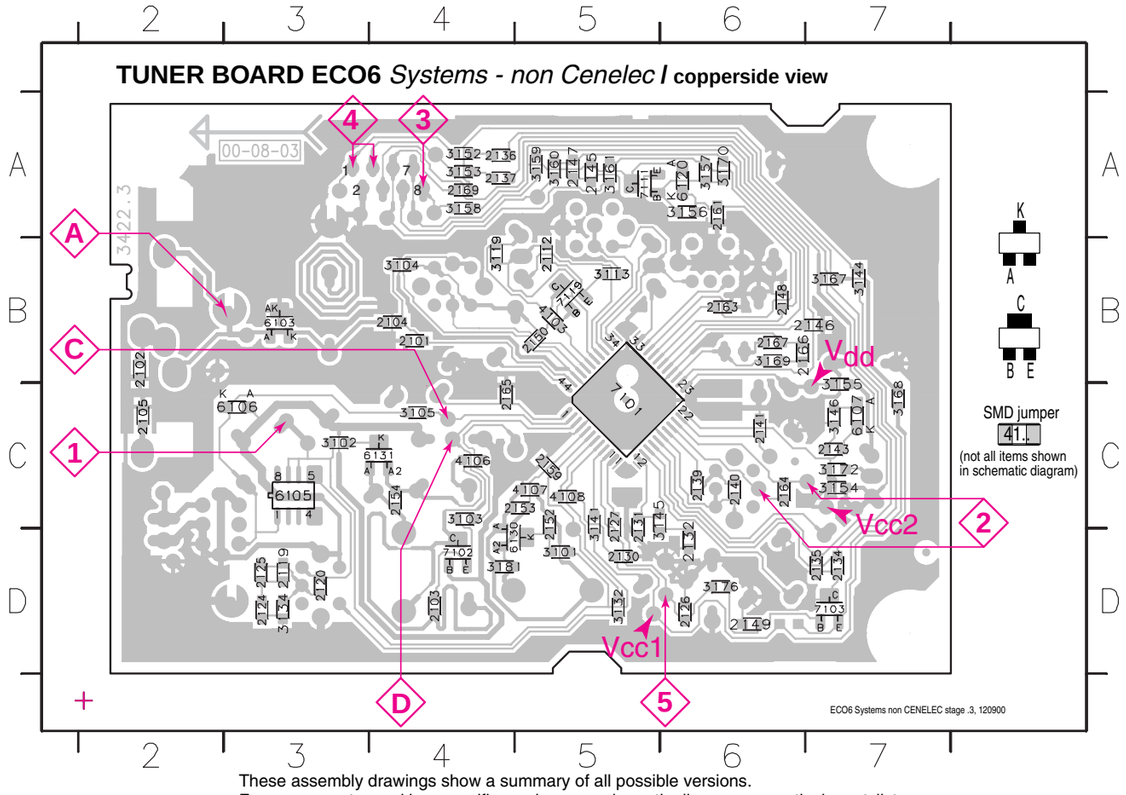
Signal path
FM
AM
MPX (Audio Frequency)
AF - left/right

ECO6 Sys-non Cenelec, 000911

1101 A1
1102 B1
1103 F2
1120 E14
1130 A2
1131 B2
1132 G13
2101 B3
2102 B1
2103 C7
2104 B3
2105 A2
2106 F3
2107 F4
2119 H6
2120 G6
2124 H6
2125 H6
2126 F7
2127 E7
2128 C8
2129 C7
2130 F11
2131 G8
2132 G8
2133 G8
2134 H8
2135 H9
2136 G14
2137 G13
2138 F9
2139 G9
2140 G9
2141 F10
2143 G12
2144 G11
2145 F12
2146 E12
2147 E12
2148 E12
2149 H7
2150 A10
2152 E4
2153 E5
2154 D5
2155 D5
2159 F6
2161 C11
2163 D11
2164 F10
2165 C7
2166 E11
2167 E11
2169 H8
3101 E4
3102 D4
3103 C6
3104 A7
3105 B6
3132 G5
3134 H6
3141 E7
3142 E7
3143 G7
3144 H7
3145 F8
3146 G13
3152 G14
3153 G13
3154 G13
3155 G11
3156 C12
3157 C12
3158 E13
3159 D13
3160 D12
3161 D13
3167 F12
3168 F11
3169 E11
3170 C12
3172 G12
3176 G7
3181 E6
5102 F2
5109 B9
5110 B10
5111 A8
5112 A11
5114 B11
5119 G9
5121 E11
5123 G5
5130 E5
5131 C6
6103 B2
6105-1 F3
6105-2 G5
6106 C3
6107 G13
6120 C13
6130 E5
6131 D5
7101 C8
7102 C6
7103 H7
7111 C13
7112 G12
T102 B2
T103 B2
T105 F2
T106 F2
T109 B6
T110 F5
T111 F4
T112 F7
T113 A8
T114 B10
T115 A8
T116 F10
T117 G13
T118 G11
T120 F13
T121 F13
T122 F13
T123 E13
T124 G14
T125 F14
T126 F13
T127 F13
T128 D7
T140 F11
T141 F10
T142 F10

7A-3





These assembly drawings show a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

TUNER ADJUSTMENT TABLE (ECO6 FM/MW- and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130	◇1	8V ±0.2V
			87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123		6.9V ±0.2V
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz			1602kHz	5123		8V ±0.2V
			531kHz	check		1.1V ±0.4V
FM IF						
FM	10.7MHz, 45mV continuous wave	◇D	IC 7101 21 shortcircuit to block AFC 2141	5119	◇2	0 ± 3 mV DC
FM RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	◇A	108MHz	2155	◇4	MAX
	87.5MHz (65.81MHz)	mod=1kHz Δf=±22.5kHz	87.5MHz (65.81MHz)	5131		
VCO						
FM	98MHz, 1mV continuous wave	◇A	98MHz	3142	◇3	152kHz ±1kHz 1)
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	◇C Δf=±10kHz V_{RF} = 0.5mV (as low as possible)	IC 7101 36 100nF 220R	5111	◇5	max. f_o symmetric
			IC 7101 40 100nF 220R see remark 2)	5112		
AM AFC **MW**		◇C continuous wave V_{RF} = 2mV		5114	◇2	0 ± 2 mV DC
AM RF 3)						
MW 4) FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz	◇B	1494kHz	2106	◇5	max. f_o symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz	Δf = ±30kHz V_{RF} as low as possible	1500kHz	2106		
	560kHz		560kHz	5102		

ECO6, Sys + PA with frame aerial, 070799

Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

2) RC network serves for damping the IF-filter while adjusting the other one.

3) For AM RF adjustments the original frame antenna has to be used !

4) MW has to be aligned before LW.

↕ Repeat

Electrical Partslist *ECO6* *SYSTEMS NON-CENELEC*

7A-4

MISCELLANEOUS

1101	2422 015 19376	SOCKET 2P CLICKFIT	USA only
1102	4822 267 10283	SOCKET COAX, IEC 75Ω	not USA
1103	4822 265 31184	JST CONNECTOR 2 POLE	
1120	4822 265 11515	FFC SOCKET, 8P	

CAPACITORS

2101 ©	4822 126 13692	47pF	1%	63V	
2102 ©	4822 126 13838	100nF	10%	50V	not USA
2103 ©	5322 122 31647	1nF	10%	63V	
2104 ©	5322 122 32531	100pF	5%	50V	
2105 ©	4822 126 13838	100nF	10%	50V	USA only
2106	2020 800 00191	3-11pF TRIMCAP.,N450			
2107	4822 121 51319	1µF	20%	50V	
2120 ©	4822 126 13689	18pF	1%	63V	
2124 ©	5322 122 32654	22nF	10%	63V	
2125 ©	2020 552 96199	560pF	1%	50V	
2126 ©	5322 122 31863	330pF	5%	50V	
2127 ©	4822 126 14076	220nF	20%	25V	
2128	4822 124 40248	10µF	20%	63V	
2129	4822 124 41584	100µF	20%	10V	
2130 ©	5322 122 32654	22nF	10%	63V	
2131 ©	4822 126 13482	470nF	20%	16V	
2132 ©	4822 126 13482	470nF	20%	16V	
2133	4822 124 21913	1µF	20%	63V	
2134 ©	4822 126 13188	15nF	5%	63V	not USA
2134 ©	5322 122 32654	22nF	10%	63V	USA only
2135 ©	4822 126 13188	15nF	5%	63V	not USA
2135 ©	5322 122 32654	22nF	10%	63V	USA only
2136 ©	4822 126 14076	220nF	20%	25V	
2137 ©	4822 126 14076	220nF	20%	25V	
2138	4822 124 22652	2,2µF	20%	50V	
2139 ©	4822 126 14236	15pF	5%	50V	
2140 ©	4822 126 13695	82pF	1%	63V	
2141 ©	4822 126 13838	100nF	10%	50V	
2143 ©	4822 126 14076	220nF	20%	25V	
2144	4822 124 21913	1µF	20%	63V	
2145 ©	4822 122 33575	220pF	5%	50V	
2146 ©	4822 122 33575	220pF	5%	50V	
2147 ©	4822 122 33575	220pF	5%	50V	
2148 ©	4822 122 33127	2,2nF	10%	63V	
2149 ©	5322 122 32659	33pF	5%	50V	RDS only
2150 ©	4822 126 13838	100nF	10%	50V	
2152 ©	4822 126 12105	33nF	5%	63V	not for East Europe
2152 ©	5322 116 80853	560pF	5%	63V	for East Europe only
2153 ©	4822 126 13486	15pF	2%	63V	not for East Europe
2153 ©	4822 122 33926	12pF	2%	50V	for East Europe only
2155	2020 800 00191	3-11pF TRIMCAP.,N450			
2159 ©	5322 122 32659	33pF	5%	50V	
2164 ©	4822 126 13482	470nF	20%	16V	
2165 ©	4822 126 13838	100nF	10%	50V	
2166 ©	5322 122 31647	1nF	10%	63V	
2167 ©	4822 122 33926	12pF	5%	50V	
2169 ©	4822 122 33127	2,2nF	10%	63V	RDS only

RESISTORS

3101 ©	4822 051 20333	33kΩ	5%	0,1W	
3102 ©	4822 117 10837	100kΩ	1%	0,1W	
3103 ©	4822 051 20822	8,2kΩ	5%	0,1W	
3104 ©	4822 117 13577	330Ω	1%	0,1W	
3105 ©	4822 117 11503	220Ω	5%	0,1W	
3132 ©	4822 051 20479	47Ω	5%	0,1W	
3134 ©	4822 051 20223	22kΩ	5%	0,1W	
3141 ©	4822 117 11148	56kΩ	1%	0,1W	
3142	4822 100 12159	TRIMPOT. 100kΩ			

RESISTORS

3143 ©	4822 051 20223	22kΩ	5%	0,1W	RDS only
3144 ©	4822 051 10102	1kΩ	2%	0,25W	RDS only
3145©	4822 117 11449	2,2kΩ	1%	0,1W	
3146 ©	4822 051 20229	22Ω	5%	0,1W	
3152 ©	4822 051 20471	470Ω	5%	0,1W	
3153 ©	4822 051 20471	470Ω	5%	0,1W	
3154 ©	4822 117 13577	330Ω	1%	0,1W	
3155 ©	4822 117 11503	220Ω	5%	0,1W	
3156 ©	4822 117 10837	100kΩ	1%	0,1W	
3157 ©	4822 117 10837	100kΩ	1%	0,1W	
3158 ©	4822 051 20471	470Ω	5%	0,1W	
3159 ©	4822 051 20471	470Ω	5%	0,1W	
3160 ©	4822 051 20471	470Ω	5%	0,1W	
3161 ©	4822 051 20223	22kΩ	5%	0,1W	
3167 ©	4822 051 20121	120Ω	5%	0,1W	
3168 ©	4822 051 20121	120Ω	5%	0,1W	
3169 ©	4822 051 20154	150kΩ	5%	0,1W	
3170 ©	4822 117 10837	100kΩ	1%	0,1W	
3172 ©	4822 051 20562	5,6kΩ	5%	0,1W	
3176 ©	4822 051 20333	33kΩ	5%	0,1W	RDS only
3181 ©	4822 051 10102	1kΩ	2%	0,25W	
4103 ©	4822 051 20008	CHIP JUMPER 0805			
4106 ©	4822 051 20008	CHIP JUMPER 0805			
4107 ©	4822 051 20008	CHIP JUMPER 0805			
4108 ©	4822 051 20008	CHIP JUMPER 0805			

COILS

5102	4822 157 71634	RF-COIL MW
5109	4822 242 70665	FM-IF FILTER 10,7MHz
5110	4822 242 70665	FM-IF FILTER 10,7MHz
5111	2422 549 44023	AM-IF FILTER 450kHz
5112	4822 157 70302	AM-IF FILTER 450kHz
5114	4822 157 70302	AM-IF FILTER 450kHz
5119	4822 157 11443	DISCRIMINATOR COIL
5121	4822 242 10261	QUARTZ 75kHz
5123	2422 549 44108	RF-COIL, AM-OSCILLATOR
5130	4822 157 11843	RF COIL 1,5 TURNS
5131	4822 157 11843	RF COIL 1,5 TURNS

DIODES

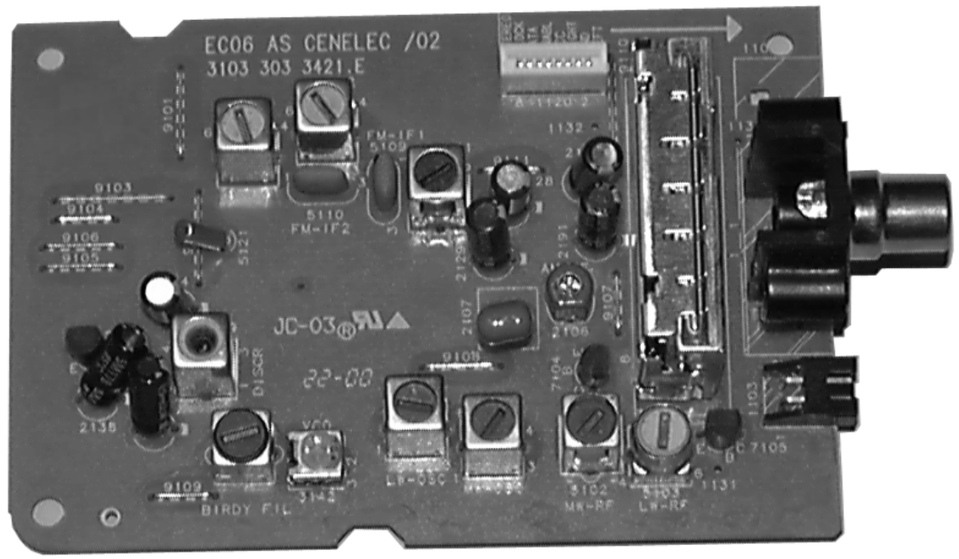
6103 ©	5322 130 34337	BAV99
6105 ©	4822 130 83075	HN1V02H
6106 ©	4822 130 83757	BAS216
6107 ©	9340 386 90115	BZX284-C11
6120 ©	4822 130 83757	BAS216
6130 ©	4822 130 82833	1SV228
6131 ©	4822 130 82833	1SV228

TRANSISTORS

7102	4822 130 42131	BF550	
7103 ©	5322 130 42756	BC857C	RDS only
7111 ©	5322 130 42755	BC847C	
7112	4822 130 44503	BC547C	

INTEGRATED CIRCUITS

7101 ©	9351 740 80557	TEA5757H/V1, RADIO IC



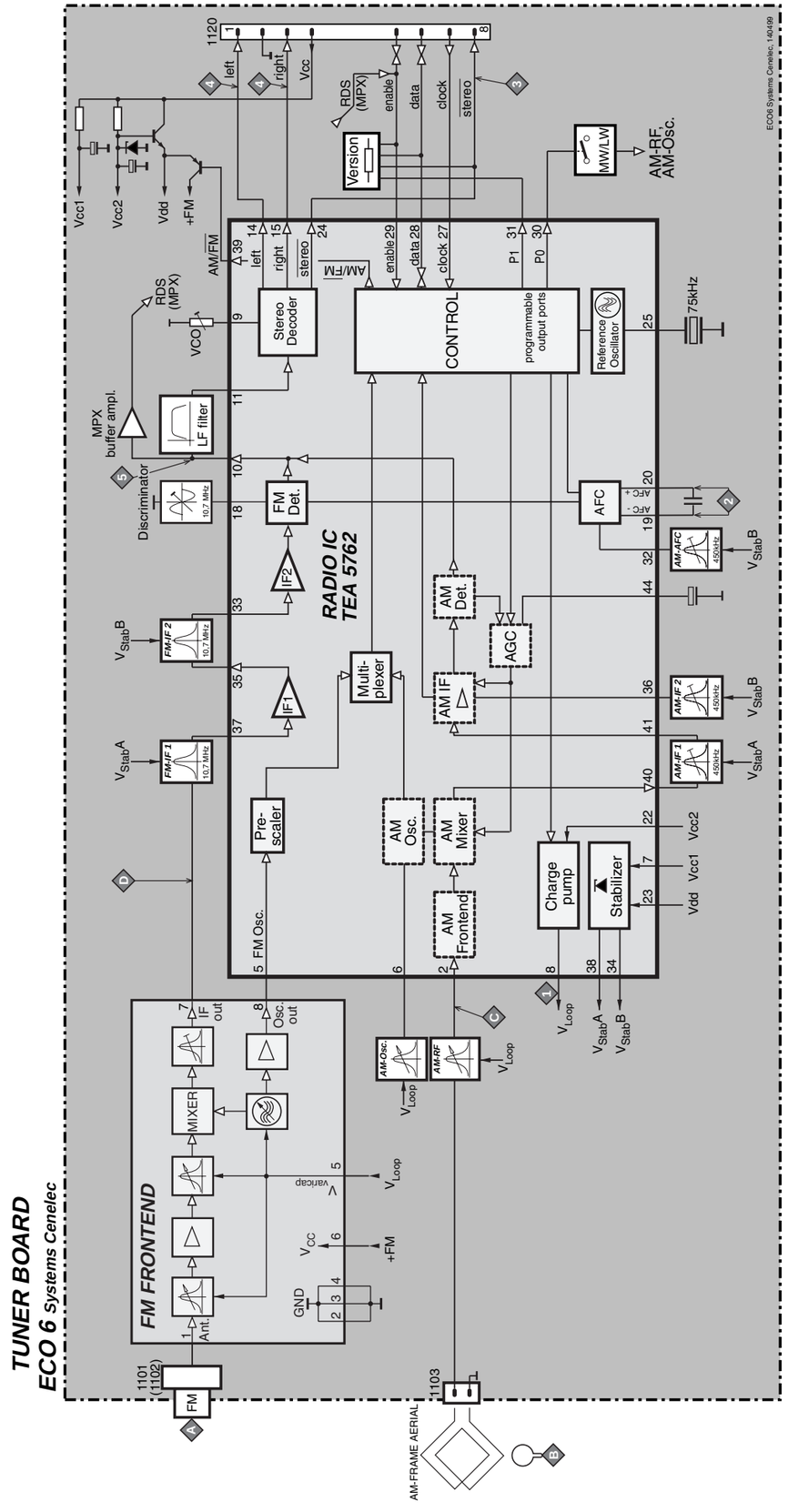
ECO6 Tuner Board

version: ***SYSTEMS CENELEC***

TABLE OF CONTENTS

Blockdiagram 7B-1
Schematic Diagram.....7B-2
Component Layout.....7B-3
Adjustment table 7B-3
Electrical Partslist.....7B-4

BLOCK DIAGRAM



7B-2

TUNER BOARD ECO6 / SYSTEMS-CENELEC

VERSION PROGRAMMING COMPONENTS

VERSION	6120	3156	3157	3170	7111
/00 /02 FM/MW/LW	⊠				
/00 /02 FM/MW		⊠	⊠	⊠	⊠
/01 FM/MW		⊠	⊠	⊠	⊠
/14 FM-OIRT/MW		⊠	⊠	⊠	⊠
/17 FM/AM		⊠	⊠	⊠	⊠

⊠ component mounted

VERSION DETECTION

P1 6120 BAS216 — 3156 100K — 0.2V — 0V — 7111 BC847C — 3170 100K — 3157 100K

PROGRAMMABLE OUTPUT PORTS

P1 — P0

FM FRONTEND FE450

1110 — 1102 — YKD31-0432 — 1101 USA — YKD21 — 2105 USA 100n — 1130 C-PAD — 1131 C-PAD — T103 — 2102 100n — T102 0V — ANT — GND — VCC — Varicap — MIXER — IF-OUT 0V — OSC OUT 0.1V — 7.2V — 1.6-8V — T107 — 3195 100R +FM — 2191 100u — 2190 100u (p) — 10n — 3194 2K2 — 2180 10n — 3190 120R — 3192 330R — 3193 330R — T104 — 3191 120R

AM-IF1 5111 450kHz — T113 — T115 — 2150 100n

AM-IF2 5112 450kHz — T114

AM-AFC 5114 450kHz

FM-IF1 5109 — **FM-IF2** 5110 — AM/FM 9V

7101 TEA5762

AM DET — RIPPLE — AM-RF — FM-GND — RF-GND1 — FM-OSC — AM-OSC — VCC1 7.8V 8.2V — I-TUNE 1.6-8V 1-8V — VCO 1V 1.3V — AF-OUT 0.7V 10 — MPX-IN 1.2V — AGC — AM-IF — RF-GND2 — AM-IF1-IN — AM-MIXOUT — AM-FM — VSTABA — FM-IF1-IN — AM-IF2 — FM-IF2 — VSTABB — FM-IF2-IN 1.2V 0.7V 33 — AM-AFC 32 1.4V — P1 31 7.5V — P0 30 7.5V 0.1V — WRITE-EN 29 0V — DATA 28 0V — CLOCK 27 0V — DIG-GND 26 — XTAL OSC 25 1.4V — MONO/STEREO 24 stereo 0.2V mono 4.8V — VDD 23 8.2V 8.3V 7.5V — VCC2 — LPF — MUTE — LEFT — RIGHT — PILOT — FILTER — IF-GND — FM-DEMOD — AFC- — AFC+ — FIELDSTR-IND — 0.6V 0.15V — 1V 0V — 1.1V — 2V — 11V

2128 10u — 2165 100n — 2129 100u — 2101 100n (p) — 2161 (p) — 2163 LW — 2148 2n2 — 2147 220p — 2146 220p

AM AMPLIFIER — AM FRONTEND — AM MIXER — AM OSC — AM IF — AM DET — FM IF1 — FM IF2 — FM DET — AFC — AGC — AGC CONTROL — CONTROL — CHARGE PUMP — STABILIZER — PRE-SCALER — MULTI-PLEXER — STEREO DECODER

VCO 3142 — 3141 56K — 100K

2127 220n — 3135 1K — 1.2V

FM-IF2 CONTROL

3169 150K — 2166 1n — 2167 12p — 5121 DT-381 75 kHz

3161 22K — 3160 470R — 3159 470R — 3158 470R — 2145 220p

5V 152kHz, 50mVpp 0V stereo mono stereo — 3 — stereo 0.4V mono 4.8V

T123 STEREO — T122 CLOCK 0V — T121 DATA 0V — T120 ENABLE/MPX 0V — T127 VCC — T126 RIGHT — T125 GND — 1120 — LEFT — FE-BT-VK-N — to/from — 4

from 2169 MPX — 12Vtyp (10-14V)

AM FRAME AERIAL — 1103 XH-S — T105 — T106 — 4101* 0R — 5102 — MW — 7KL — 3106 115 20p LW — 4102* 0R — A — B

MW/LW-RF — 6105-1 HN1V02H — 2107 1u — T111 — 1

LW only — 3108 2K2 — 7104 BC337-40 — P01 LW =HIGH — 6106 BAS216 — T110 — 2159 33p — T109 — 3105 220R — C

AM-OSCILLATOR — 6105 HN1V02H — 6105-2 HN1V02H — 5123 MW — 5122 LW — 3132 47R — 2120 18p 22p LW — 2118 (p) — 2125 560p — 3134 22K — 4104* 0R — 2123 390p — 2124* 10n — 2122 3n3

BIRDY FILTER — 5115 — T112 — 5 — 2131 470n — 3145 2K2 — 2132 470n — 2133 1u — 2138 2u2 — 3130 820R — 3131 820R — 2134 15n 22n USA — 2135 15n 22n USA — 2139 15p — 5118 10nH — 2140 82p — 5119 — DISCRIMINATOR

RDS only — VCC1 — 3143 22K — 3144 1K — 1.3V — 2169 MPX 2n2 to 1120 pin 5 — 3176 33K — 0.7V — BC857C 7103 — 2149 33p — MPX BUFFER AMPLIFIER

LW only — 7105 BC337-40 — 0.7V 0.1V — 3109 4K7 — MW=HIGH — P0 — 5103 LW — 2109 10p — 2108 100p

P01 — P0 — 3125 10K — 8V 6.7V — LW=HIGH — 7122 BC847C — 0V 0.7V — 3128 2K2 — 7.4V — 3180 10K — 3123 4K7 — VDD — 8.3V 7.5V — BC857B 7109

0V — 7124 BC847C — 0.7V 0.1V — 3137 22K — P0 MW=HIGH

VCC1 — 7.8V 8.2V — T140 — 3168 120R — 3167 120R — 2130 22n — 11V — VCC2 — T117 — 3154 330R — 1132 C-PAD

12V — 7112 BC547C — 9.6V — 3172 5K6 — 6107 BZX284-C11 — 3171 47K — 2143 220n — 3146 22R — 3153 470R — 3152 470R — 2137 220n — 2136 220n — T124

VDD — 8.2V 8.3V 7.5V — T118 — 3155 150R — 2144 1u — 8.9V — +FM — 7110 BC857B — 68K — 3151 33K — 2162 — 8.2V — 3150 10K — AM/FM from 7101/39

T116 — 2141 100n — 470n 2164 — 2 — T141 — T142

T112 — 5 — 3 2 1

T102 0V — 2102 100n — 1131 C-PAD — T103

T104 — D

T109 — C

T111 — 1

T112 — 5

T116 — 2

T117 — 3

T118 — 3

T123 — 4

T124 — 4

T125 — 4

T126 — 4

T127 — 4

T140 — 3

T141 — 2

T142 — 2

T105 — 1

T106 — 1

T107 — 3

T109 — C

T110 — 2

T111 — 1

T112 — 5

T113 — 2

T114 — 2

T115 — 1

T116 — 2

T117 — 3

T118 — 3

T120 — 4

T121 — 4

T122 — 4

T123 — 4

T124 — 4

T125 — 4

T126 — 4

T127 — 4

T140 — 3

T141 — 2

T142 — 2

* marked components not for LW version

ECO6 Sys-Cenelec, 010517

LEGEND

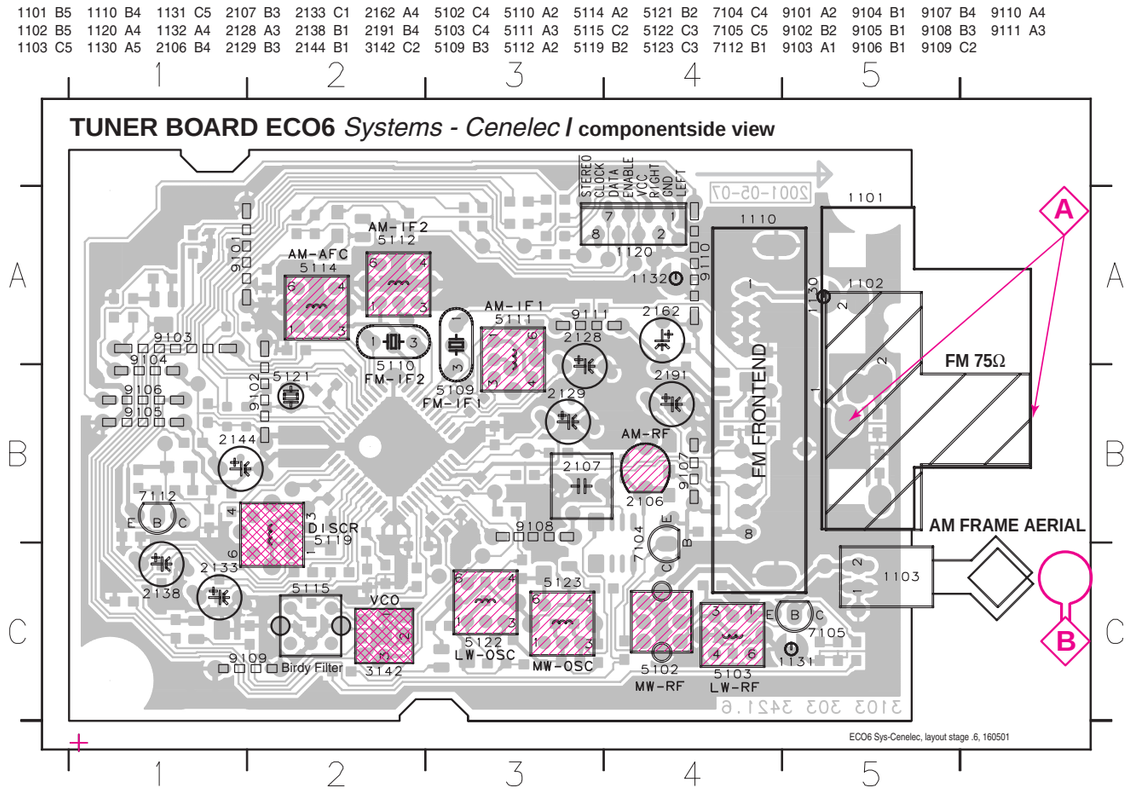
* ... only assembled in FM/AM-version
(p)...for provision only
USA ... for USA version only
LW ... for LW version only

SMD jumper 41xx 0R

EVM — ...V FM mode stereo — ...V MW mode — ...V LW mode
voltages measured while set is tuned to a strong transmitter

Signal path
FM
AM
MPX (Audio Frequency)
AF - left/right

1101	A2	5121	E11
1102	B1	5122	H5
1103	E2	5123	G5
1110	B2	6105-1	E4
1120	E14	6105-2	G6
1130	A2	6106	D4
1131	C2	6107	G13
1132	F13	6120	C13
2102	B1	7101	C8
2105	A2	7103	H8
2106	E3	7104	D2
2107	E4	7105	F4
2108	G3	7109	H3
2109	G3	7110	H12
2118	H6	7111	C13
2119	H6	7112	G12
2120	H6	7122	H4
2122	I6	7124	H7
2123	H6	T102	B2
2124	H6	T103	B2
2125	H6	T104	B6
2127	E7	T105	E2
2128	B8	T106	E2
2129	C7	T107	C3
2130	F11	T109	D5
2131	F8	T110	D5
2132	F8	T111	E5
2133	F8	T112	F7
2134	I8	T113	A9
2135	I9	T114	B11
2136	H14	T116	F10
2137	H13	T117	F13
2138	F9	T118	G11
2139	G9	T120	F13
2140	G9	T121	F13
2141	F10	T122	E13
2143	G12	T123	E13
2144	G11	T124	G14
2145	E11	T125	F14
2146	E12	T126	F13
2147	E12	T127	F13
2148	E12	T140	F11
2149	H7	T141	F10
2150	A10	T142	F10
2159	D5		
2161	C11		
2162	H12		
2163	D11		
2164	G10		
2165	C7		
2166	E11		
2167	E11		
2169	G8		
2180	C4		
2190	C3		
2191	C3		
3105	D5		
3108	D2		
3109	G4		
3123	H3		
3125	H2		
3128	H3		
3130	I9		
3131	I9		
3132	G4		
3134	H6		
3135	E7		
3137	H7		
3141	E7		
3142	E6		
3143	G7		
3144	G8		
3145	F8		
3146	G13		
3150	H12		
3151	H12		
3152	G14		
3153	G13		
3154	F13		
3155	G12		
3156	C12		
3157	D12		
3158	E13		
3159	D13		
3160	D13		
3161	D13		
3167	F12		
3168	F11		
3169	E11		
3170	D12		
3171	G12		
3172	G12		
3176	H7		
3180	I3		
3190	B6		
3191	B7		
3192	B6		
3193	B4		
3194	C4		
3195	C3		
4101	E2		
4102	F3		
4104	H5		
5102	E3		
5103	F2		
5109	B9		
5110	B10		
5111	A9		
5112	A11		
5114	B11		
5115	E7		
5118	G9		
5119	G9		



These assembly drawings show a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

7B-3

TUNER ADJUSTMENT TABLE (**ECO6 Cenelec** FM/MW - and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (50kHz grid)			108MHz	check	1	8V ±1.2V
			87.5MHz	check		1.6V ±0.5V
MW 531 - 1602kHz (9kHz grid)			1602kHz	5123		8V ±0.2V 3-band 6.9V ±0.2V 2-band
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz (3kHz grid)			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
FM - IF						
FM	10.7MHz, 45mV continuous wave	D	IC 7101 21 shortcircuit to block AFC 2141	5119	2	0mV ±3mV
FM - VCO						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz 1)
FM RF (channel separation)	Note: The FM-frontend unit has already been adjusted by the factory and needs therefore no further adjustments for service purposes.					
FM	98MHz, 1mV 90% Left + 9% pilot mod=1kHz	A	98MHz	IF coil inside FM frontend 1110	4	right channel min.
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	C Δf = ±10kHz V_{RF} = 0.5mV (as low as possible)	IC 7101 36 220R 100nF	5111	5	max. f_o symmetric
			IC 7101 40 220R 100nF see remark 2)	5112		
AM AFC **MW**		C continuous wave V_{RF} = 2mV		5114	2	0mV ±2mV
AM RF 3)						
MW	1494kHz	B Δf = ±30kHz V_{RF} as low as possible	1494kHz	2106	5	max. f_o symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		

ECO6 Sys Cenelec, 190599

Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

2) RC network serves for damping the IF-filter while adjusting the other one.

3) For AM RF adjustments the original frame antenna has to be used! MW has to be aligned before LW.

↕ Repeat

Electrical Partslist *ECO6* SYSTEMS-CENELEC

7B-4

MISCELLANEOUS

1101	2422 015 19376	SOCKET CLICKFIT 2P	USA only
1102	4822 267 10283	SOCKET COAX, IEC 75Ω	not USA
1103	4822 265 31184	JST CONNECTOR, 2 POLE	
1110	2422 542 90071	FM FRONTEND	
1120	4822 265 11515	FFC SOCKET, 8P	

CAPACITORS

2102 ©	4822 126 13838	100nF	10%	50V	not USA
2105 ©	4822 126 13838	100nF	10%	50V	USA only
2106	2020 800 00204	TRIMCAP. 4,2 - 20pF, N750			LW only
2106	2020 800 00191	TRIMCAP. 3 - 11pF, N450			FM/AM only
2107	4822 121 51319	1µF	20%	50V	
2108 ©	5322 122 32531	100pF	5%	50V	LW only
2109 ©	5322 122 32448	10pF	5%	50V	LW only
2120 ©	4822 126 13689	18pF	1%	63V	FM/AM only
2120 ©	5322 122 32658	22pF	5%	50V	LW only
2122 ©	4822 122 33891	3,3nF	10%	63V	LW only
2123 ©	2020 552 93494	390pF	1%	50V	LW only
2124 ©	4822 122 33177	10nF	20%	50V	FM/AM only
2125 ©	2020 552 96199	560pF	1%	50V	
2127 ©	4822 126 14076	220nF	20%	25V	
2128	4822 124 40248	10µF	20%	63V	
2129	4822 124 41584	100µF	20%	10V	
2130 ©	5322 122 32654	22nF	10%	63V	
2131 ©	4822 126 13482	470nF	20%	16V	
2132 ©	4822 126 13482	470nF	20%	16V	
2133	4822 124 21913	1µF	20%	63V	
2134 ©	3198 017 31530	15nF	10%	50V	not USA
2134 ©	5322 122 32654	22nF	10%	63V	USA only
2135 ©	3198 017 31530	15nF	10%	50V	not USA
2135 ©	3198 017 32230	22nF	10%	25V	USA only
2136 ©	4822 126 14076	220nF	20%	25V	
2137 ©	4822 126 14076	220nF	20%	25V	
2138	4822 124 22652	2,2µF	20%	50V	
2139 ©	4822 126 14236	15pF	5%	50V	
2140 ©	4822 126 13695	82pF	1%	63V	
2141 ©	4822 126 13838	100nF	10%	50V	
2143 ©	4822 126 14076	220nF	20%	25V	
2144	4822 124 21913	1µF	20%	63V	
2145 ©	4822 122 33575	220pF	5%	50V	
2146 ©	4822 122 33575	220pF	5%	50V	
2147 ©	4822 122 33575	220pF	5%	50V	
2148 ©	4822 122 33127	2,2nF	10%	63V	
2149 ©	5322 122 32659	33pF	5%	50V	RDS only
2150 ©	4822 126 13838	100nF	10%	50V	
2159 ©	5322 122 31151	22µF	20%	50V	
2163 ©	4822 126 13838	100nF	10%	50V	LW only
2164 ©	4822 126 13482	470nF	20%	16V	
2165 ©	4822 126 13838	100nF	10%	50V	
2166 ©	5322 122 31647	1nF	10%	63V	
2167 ©	4822 122 33926	12pF	5%	50V	
2169 ©	4822 122 33127	2,2nF	10%	63V	RDS only
2180 ©	3198 017 31030	10nF	10%	50V	
2190 ©	4822 126 13838	100nF	10%	50V	
2191	4822 124 40178	100µF	20%	10V	

RESISTORS

3105 ©	4822 117 11503	220Ω	5%	0,1W	
3108 ©	4822 117 11449	2,2kΩ	1%	0,1W	LW only
3109 ©	4822 051 20472	4,7kΩ	5%	0,1W	LW only
3123 ©	4822 051 20472	4,7kΩ	5%	0,1W	LW only
3125 ©	4822 117 10833	10kΩ	1%	0,1W	LW only

RESISTORS

3128 ©	4822 117 11449	2,2kΩ	1%	0,1W	LW only
3130 ©	3198 021 38210	820Ω	5%	0,06W	
3131 ©	3198 021 38210	820Ω	5%	0,06W	
3132 ©	4822 051 20479	47Ω	5%	0,1W	
3134 ©	4822 051 20223	22kΩ	5%	0,1W	
3135 ©	3198 021 31020	1kΩ	5%	0,06W	
3137 ©	4822 051 20223	22kΩ	5%	0,1W	LW only
3141 ©	4822 117 11148	56kΩ	1%	0,1W	
3142	4822 100 12159	TRIMPOT. 100kΩ			
3143 ©	4822 051 20223	22kΩ	5%	0,1W	RDS only
3144 ©	4822 051 10102	1kΩ	2%	0,25W	RDS only
3145 ©	4822 117 11449	2,2kΩ	1%	0,1W	
3146 ©	4822 051 20229	22Ω	5%	0,1W	
3150 ©	4822 117 10833	10kΩ	1%	0,1W	
3151 ©	4822 051 20683	68kΩ	5%	0,1W	
3152 ©	4822 051 20471	470Ω	5%	0,1W	
3153 ©	4822 051 20471	470Ω	5%	0,1W	
3154 ©	4822 117 13577	330Ω	1%	0,1W	
3155 ©	4822 117 10353	150Ω	5%	0,1W	
3156 ©	4822 117 10837	100kΩ	1%	0,1W	
3157 ©	4822 117 10837	100kΩ	1%	0,1W	
3158 ©	4822 051 20471	470Ω	5%	0,1W	
3159 ©	4822 051 20471	470Ω	5%	0,1W	
3160 ©	4822 051 20471	470Ω	5%	0,1W	
3161 ©	4822 051 20223	22kΩ	5%	0,1W	
3167 ©	4822 051 20121	120Ω	5%	0,1W	
3168 ©	4822 051 20121	120Ω	5%	0,1W	
3169 ©	4822 051 20154	150kΩ	5%	0,1W	
3170 ©	4822 117 10837	100kΩ	1%	0,1W	
3171 ©	4822 117 10834	47kΩ	1%	0,1W	
3172 ©	4822 051 20562	5,6kΩ	5%	0,1W	
3176 ©	4822 051 20333	33kΩ	5%	0,1W	RDS only
3180 ©	4822 117 10833	10kΩ	1%	0,1W	LW only
3190 ©	4822 051 20121	120Ω	5%	0,1W	
3191 ©	4822 051 20121	120Ω	5%	0,1W	
3192 ©	4822 117 13577	330Ω	1%	0,1W	
3193 ©	4822 117 13577	330Ω	1%	0,1W	
3194 ©	4822 117 11449	2,2kΩ	1%	0,1W	
3195 ©	4822 051 20101	100Ω	5%	0,1W	
4101 ©	4822 051 20008	CHIP JUMPER 0805			FM/AM only
4102 ©	4822 051 20008	CHIP JUMPER 0805			FM/AM only
4104 ©	4822 051 20008	CHIP JUMPER 0805			FM/AM only
4105 ©	4822 051 20008	CHIP JUMPER 0805			
4106 ©	4822 051 20008	CHIP JUMPER 0805			
4107 ©	4822 051 20008	CHIP JUMPER 0805			

COILS

5102	4822 157 71634	RF-COIL MW	
5103	2422 549 44107	RF-COIL LW	LW only
5109	4822 157 71639	FM-IF FILTER 10,7MHz	
5110	4822 242 70665	FM-IF FILTER 10,7MHz	
5111	2422 549 44023	AM-IF FILTER 450kHz	
5112	4822 157 70302	AM-IF FILTER 450kHz	
5114	4822 157 70302	AM-IF FILTER 450kHz	
5115	4822 157 71636	ANTI BIRDY FILTER	
5118 ©	2422 535 95881	100nH	
5119	4822 157 11443	DISCRIMINATOR COIL	
5121	4822 242 10261	QUARTZ 75kHz	
5122	2422 549 44108	RF-COIL, LW-OSCILLATOR	LW only
5123	2422 549 44108	RF-COIL, MW-OSCILLATOR	

DIODES

6105 ©	4822 130 83075	HN1V02H	
6106 ©	4822 130 83757	BAS216	
6107 ©	9340 386 90115	BZX284-C11	
6120 ©	4822 130 83757	BAS216	

TRANSISTORS

7103 ©	5322 130 42756	BC857C	RDS only
7104	9322 003 64676	TBC337-40	LW only
7105	9322 003 64676	TBC337-40	LW only
7109 ©	4822 130 60373	BC856B	LW only
7110 ©	4822 130 60373	BC856B	
7111 ©	5322 130 42755	BC847C	
7112	4822 130 44503	BC547C	
7122 ©	5322 130 42755	BC847C	LW only
7124 ©	5322 130 42755	BC847C	LW only

INTEGRATED CIRCUITS

7101	4822 209 90315	TEA5762H/V1, RADIO IC

AF11 BOARD

TABLE OF CONTENTS

Brief Introduction of the AF11 Board 8-1
AF11 Board - Component Layout 8-2
AF11 Board - Component & Chip Layout (Mapping) 8-3
AF11 Board - Chip Layout 8-4
AF11 Board - Circuit Diagram (Part 1) 8-5
AF11 Board - Circuit Diagram (Part 2) 8-6
AF11 Board - Circuit Diagram (Part 3) 8-7
Video Out Cinch part - Layout & Circuit diagram 8-8
Electrical parts list..... 8-8

8-1

BRIEF INTRODUCTION OF THE AF11 BOARD

The AF11 Board consists of the following features :

a. TDA7468D IC
TDA7468D IC (7501) which includes functions such as source selection, loudness control, dynamic bass control, treble control, volume control and muting function. Sound features such as ALC, DBB, DSC and IS are controllable via I²C Bus from the microprocessor.

The TDA7468D IC caters for 4 input sources namely TUNER, PC LINK, CD and AUX. It also has a Mic mix input. In our application, software will switch the input source to previous source MUTE during STANDBY mode and some other occasions where noise from other input sources is undesirable.

Note that the input to the TDA7468D IC must be ac coupled to prevent 'polp' noise.
Input networks are included to provide appropriate attenuation for various sources.

b. SIMPLE MIC MIXING
The AF11 Board has provisions which can be configured to cater for one of the following:
MM : which caters for Mic mixing with additional Mic amplifier board.
NM : non Mic mixing.

c. LINE OUT
Line out cinch socket for connection to external amplifier.

d. SUB-WOOFER OUT
Sub-woofer out cinch socket for connection to active sub-woofer speaker.

e. INCREDIBLE SURROUND
Incredible surround effect using transistor circuit to create phase shifting and spatial effect.

f. HEADPHONE AMPLIFIER
Headphone amplifier to drive 32 ohm to 1kohm headphone.

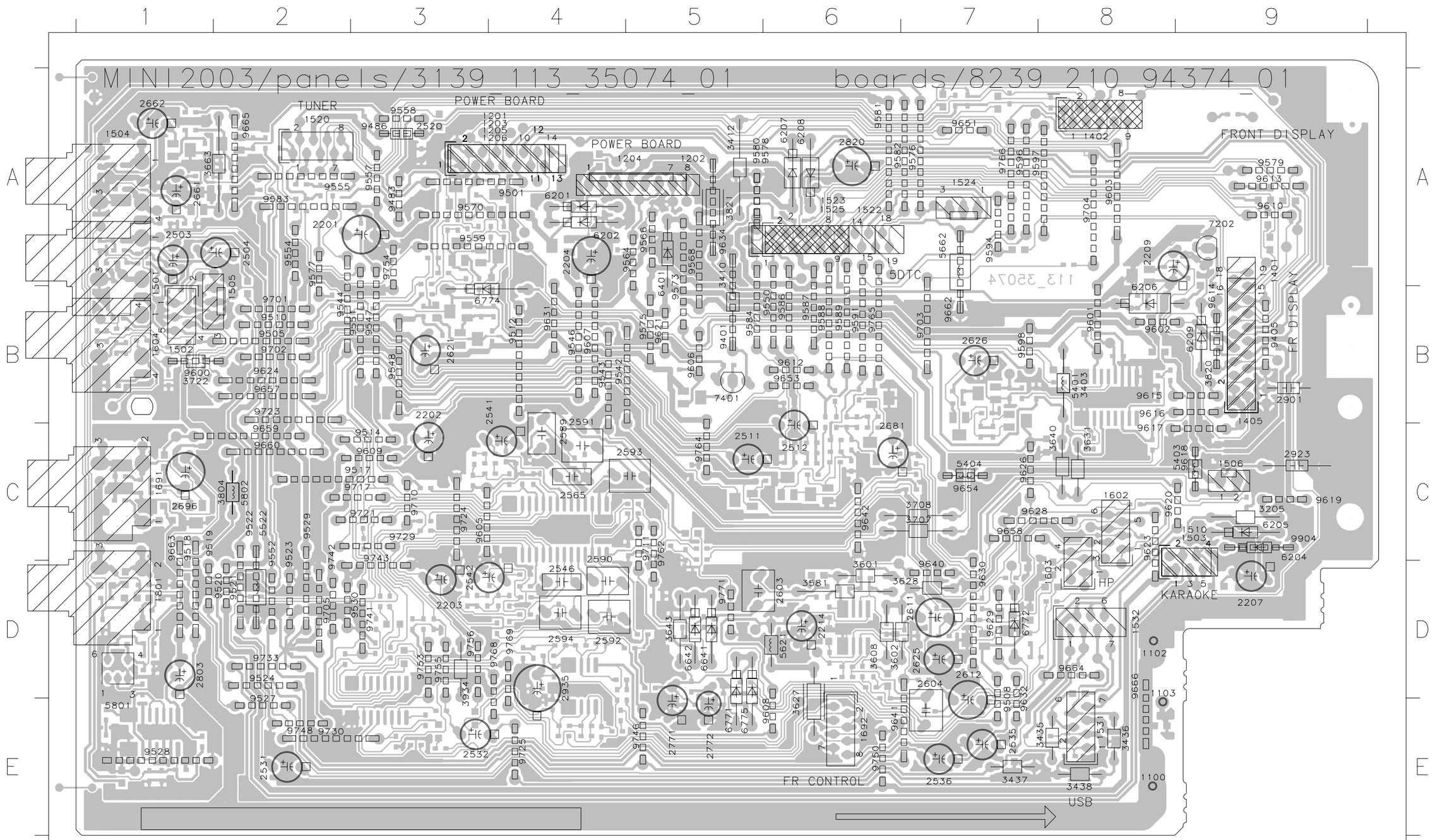
g. CD STANDBY CONTROL
CD Standby Control circuit which switches on the supply to CD servo control IC, digital out buffer IC, HF circuit and the laser light pen in CD mode only.

h. ATTENUATION NETWORK
Attenuation network is provided at the output of the AF11 Board for interfacing with power board of different output power.

i. CD DIGITAL OUT
CD Digital out cinch socket for connection to external digital audio decoders.

8-2

AF11 BOARD - COMPONENT LAYOUT



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3507 pt4 dd wk0310

8-3

AF11 BOARD - COMPONENT LAYOUT (MAPPING)

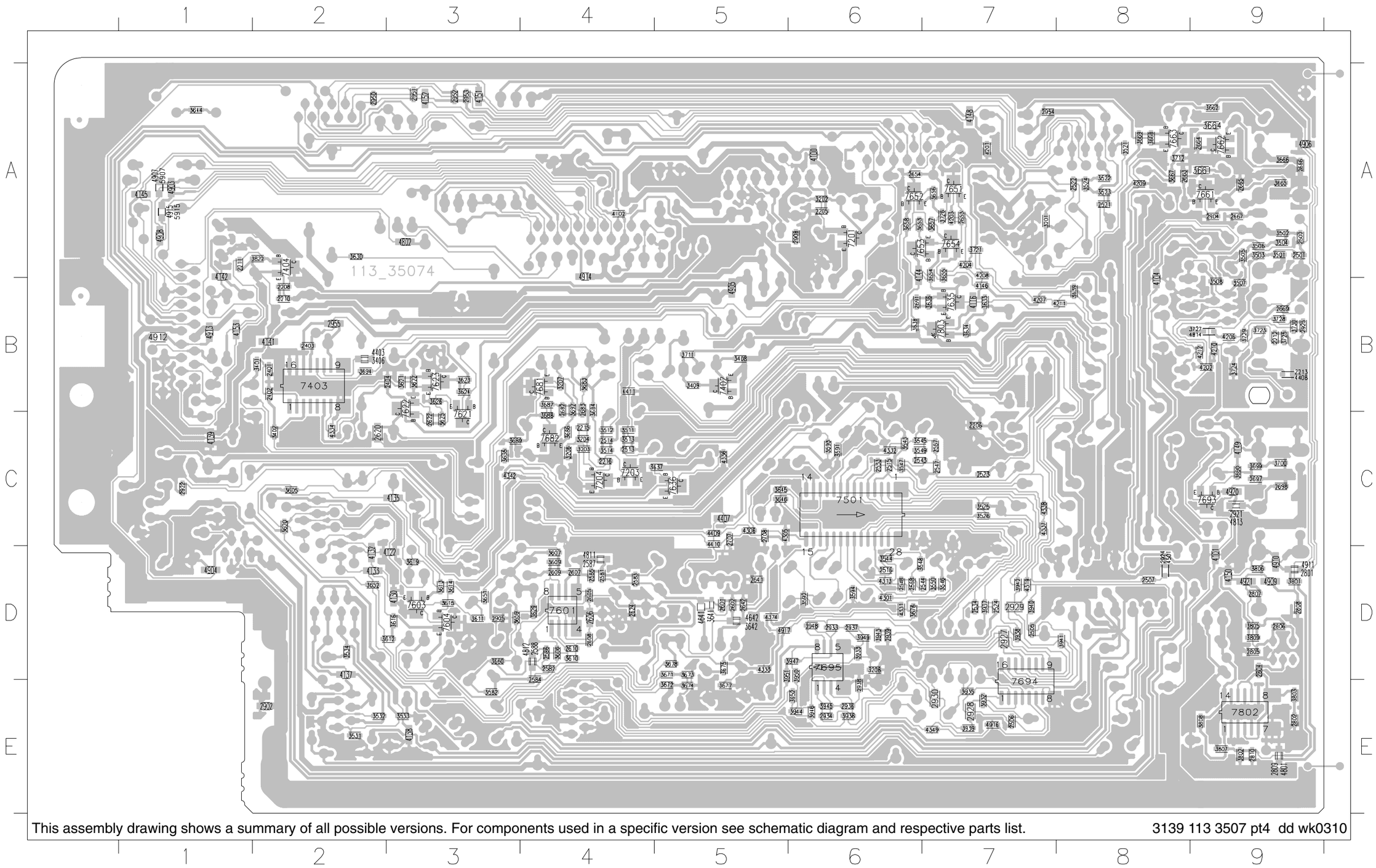
1100 E8	1504 A1	1692 E6	2532 E3	2611 D7	2935 D4	3631 C8	5621 D6	6771 E5	9514 C3	9544 B2	9570 A3	9589 B6	9610 A9	9629 D7	9662 B7	9724 C3	9762 C5
1102 D8	1505 B2	1801 D1	2535 E7	2612 D7	3205 C9	3640 C8	5662 A7	6772 D7	9517 C3	9546 B4	9573 B5	9591 B6	9612 B6	9630 D7	9663 C1	9725 E4	9764 C5
1103 D8	1506 C9	2201 A2	2536 E7	2621 B3	3403 B8	3643 D5	5801 E1	6774 B3	9518 C1	9547 B3	9575 B5	9594 A7	9613 A9	9631 B4	9664 D8	9729 C3	9765 B6
1201 A4	1510 C9	2202 B3	2541 B4	2625 D7	3410 A5	3663 A1	5802 C2	6775 E5	9519 C1	9548 B3	9576 A7	9596 A7	9614 B9	9632 E7	9665 A2	9730 E2	9766 A7
1202 A5	1520 A2	2203 D3	2542 D3	2626 B7	3412 A5	3707 C7	6201 A4	7202 A9	9520 D2	9550 B6	9577 A2	9597 A7	9615 B8	9634 A5	9666 D8	9733 D2	9768 D4
1203 A4	1522 A6	2204 A4	2546 D4	2661 A1	3435 E8	3708 C7	6202 A4	7401 B5	9521 D2	9551 B3	9578 A6	9598 B7	9616 B8	9640 D7	9701 B2	9741 D3	9769 D4
1204 A5	1523 A6	2207 D9	2565 C4	2662 A1	3436 E8	3722 B1	6204 C9	9401 B5	9522 C2	9552 C2	9579 A9	9600 B1	9617 C8	9641 E6	9702 B2	9742 C2	9771 D5
1205 A4	1524 A7	2209 A8	2589 C4	2681 C6	3437 E7	3804 C2	6205 C9	9405 B9	9523 C2	9554 A2	9580 A5	9601 B8	9618 C9	9642 C6	9703 B7	9743 C3	9904 C9
1206 A4	1525 A6	2214 D6	2590 C4	2696 C1	3438 E8	3820 B9	6206 B8	9483 A3	9524 D2	9555 A2	9581 A6	9602 B8	9619 C9	9651 A7	9704 A8	9746 E5	
1401 A9	1531 E8	2503 A1	2591 B4	2771 E5	3581 D6	3821 A5	6207 A6	9486 A3	9527 E2	9557 A3	9582 A6	9603 A8	9620 C8	9653 B6	9705 D2	9748 E2	
1402 A8	1532 D8	2504 A2	2592 D4	2772 E5	3601 D6	3934 D3	6208 A6	9501 A4	9528 E1	9558 A3	9583 A2	9605 C3	9621 B5	9654 C7	9710 C3	9750 E6	
1405 B9	1602 C8	2511 C5	2593 C5	2803 D1	3602 D6	5401 B8	6209 B9	9505 B2	9529 C2	9559 A3	9584 B5	9606 B5	9623 C8	9657 B2	9711 C5	9753 D3	
1501 A1	1603 D8	2512 C6	2594 D4	2820 A6	3608 D6	5403 C9	6401 A5	9508 E7	9530 D3	9564 A5	9586 B6	9607 B4	9624 B2	9658 C7	9717 C3	9754 A3	
1502 B1	1604 B1	2520 A3	2603 D6	2901 B9	3627 E6	5404 C7	6641 D5	9510 B2	9542 B4	9566 A5	9587 B6	9608 E6	9626 C7	9659 C2	9721 C3	9755 D3	
1503 C9	1691 C1	2531 E2	2604 D7	2923 C9	3628 D7	5522 C2	6642 D5	9512 B4	9543 B4	9568 A5	9588 B6	9609 C3	9628 C7	9660 C2	9723 B2	9756 D3	

AF11 BOARD - CHIP LAYOUT (MAPPING)

2205 A6	2516 D6	2601 D5	2682 B4	2922 C1	3203 C4	3514 C4	3592 D6	3626 B3	3657 A7	3684 B4	3801 D9	3945 E6	4141 B2	4212 B9	4411 B4	4914 A4	7635 B7
2206 C7	2521 A8	2602 D5	2683 B4	2924 D8	3204 C4	3521 A8	3593 C6	3629 D4	3658 A6	3686 C4	3802 E9	3946 E6	4142 A1	4301 D6	4501 D8	4915 A1	7636 C5
2208 B2	2522 A8	2605 D4	2691 B6	2925 B9	3206 C4	3522 A8	3594 D6	3630 A2	3659 D3	3687 B4	3803 E9	3947 D6	4144 A6	4305 C5	4641 D5	4916 E7	7651 A7
2210 B2	2523 C7	2606 D4	2697 C9	2927 D7	3207 B4	3523 A8	3605 C2	3633 B7	3660 D3	3688 C4	3805 D9	3948 D6	4145 A1	4306 C5	4642 D5	4917 D5	7652 A6
2211 A1	2524 D7	2607 D4	2698 C9	2928 E7	3208 D6	3524 A8	3606 D4	3634 B7	3661 A9	3689 C3	3806 D9	3949 D6	4146 B7	4313 D6	4801 E9	4920 C9	7653 A6
2212 B9	2533 C6	2608 D4	2707 C5	2929 D7	3401 B2	3525 C7	3607 D4	3635 C3	3662 A9	3690 C9	3807 E9	3950 D6	4148 A7	4319 D7	4802 A3	4921 D9	7654 A7
2213 B9	2534 D7	2609 D4	2708 C5	2930 E7	3402 C2	3526 C7	3609 D4	3636 B7	3664 A9	3692 B4	3808 E9	3951 D5	4149 C9	4331 D6	4811 D4	5907 A1	7661 A9
2215 C4	2543 C6	2610 D4	2801 D9	2933 D6	3406 B2	3531 E2	3610 D4	3637 C5	3665 A9	3694 B2	3809 D9	3952 E6	4150 D9	4332 C6	4812 D4	5915 A1	7662 A9
2216 C4	2544 D7	2620 C2	2802 E9	2934 E6	3408 B5	3532 E2	3611 D3	3638 B6	3666 A9	3699 C9	3822 A2	4100 A6	4151 A3	4333 D5	4813 C9	7201 A6	7663 A8
2401 B2	2547 C7	2622 C3	2804 D9	2936 E6	3409 B5	3533 E3	3612 D3	3639 B8	3667 A8	3700 C9	3932 E7	4101 D9	4152 A3	4334 C2	4814 B9	7203 C4	7681 B4
2402 B2	2548 D6	2624 D4	2805 D9	2937 D6	3501 A9	3534 D2	3613 D3	3641 D5	3668 A8	3711 B5	3933 D6	4102 A4	4153 B1	4336 C5	4903 A1	7204 C4	7682 C4
2403 B2	2567 C7	2641 D5	2806 D9	2938 E6	3502 A9	3543 C6	3614 D3	3642 D5	3669 A8	3712 A8	3935 E7	4104 B8	4201 A7	4337 C7	4904 D1	7402 B5	7693 C9
2404 B3	2568 D6	2642 D5	2807 D9	2939 D6	3503 A9	3544 D6	3615 D3	3644 A1	3671 D5	3721 A7	3936 E6	4116 B7	4202 B9	4338 C7	4905 B5	7403 B2	7694 E7
2501 A9	2581 D4	2653 A7	2808 D9	2950 A2	3504 A9	3545 C6	3616 D3	3645 C5	3672 E5	3723 B9	3937 D7	4122 D3	4203 A7	4342 C3	4906 A9	7404 A2	7695 D6
2502 A9	2582 D4	2654 A6	2809 E9	2951 A3	3505 A9	3546 D7	3619 D3	3646 C5	3673 D5	3724 B9	3938 D7	4130 D3	4204 A7	4349 E7	4907 A1	7501 C6	7802 E9
2505 D7	2583 D4	2663 A8	2810 E9	2952 A3	3506 A9	3547 C6	3620 C2	3651 D3	3674 E5	3725 B9	3939 E7	4132 D2	4206 B9	4374 D5	4908 A1	7601 D4	7803 B7
2506 E7	2584 D4	2664 A9	2902 E2	2953 A3	3507 B9	3548 D6	3621 B3	3652 D2	3675 D5	3726 A7	3940 D7	4133 D2	4207 B7	4403 B2	4909 D9	7603 D3	
2507 D8	2585 D4	2665 A9	2904 A9	2954 A7	3508 B9	3549 C6	3622 B3	3653 A6	3676 D6	3727 B9	3941 D8	4135 C3	4208 A7	4407 C5	4910 D9	7604 D3	
2513 C4	2586 D4	2666 A9	2905 D3	2955 B2	3511 C4	3550 D7	3623 B3	3654 A7	3677 E5	3728 B9	3942 D7	4137 D2	4209 A8	4408 B9	4911 D9	7621 C3	
2514 C4	2587 D4	2667 A9	2908 A6	3201 A7	3512 C4	3582 E3	3624 B3	3655 A7	3678 D5	3729 B9	3943 D6	4138 E3	4210 B9	4409 C5	4912 B1	7622 B3	
2515 C6	2588 D4	2669 B9	2921 C9	3202 A6	3513 C4	3591 C6	3625 C3	3656 A7	3683 B4	3730 B9	3944 E6	4139 C1	4211 B8	4410 C5	4913 B1	7623 B3	

8-4

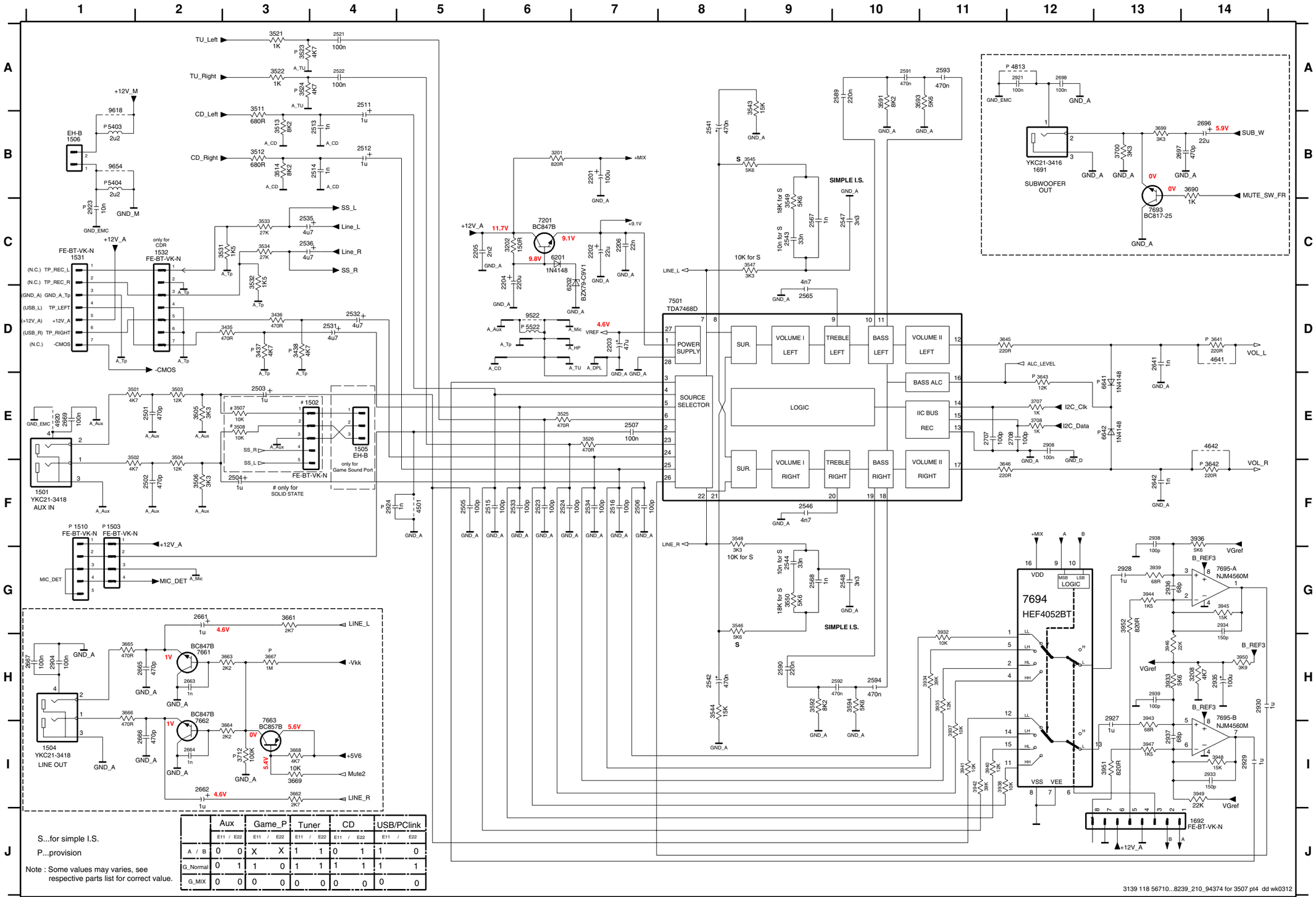
AF11 BOARD - CHIP LAYOUT



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list. 3139 113 3507 pt4 dd wk0310

8-5

AF11 BOARD - CIRCUIT DIAGRAM (PART 1)



	Aux	Game_P	Tuner	CD	USB/PClink
	E11 / E22	E11 / E22	E11 / E22	E11 / E22	E11 / E22
A / B	0 0	X X	1 1	0 1	1 0
G_Normal	0 1	1 0	1 1	1 1	1 1
G_MIX	0 0	0 0	0 0	0 0	0 0

S...for simple I.S.

P...provision

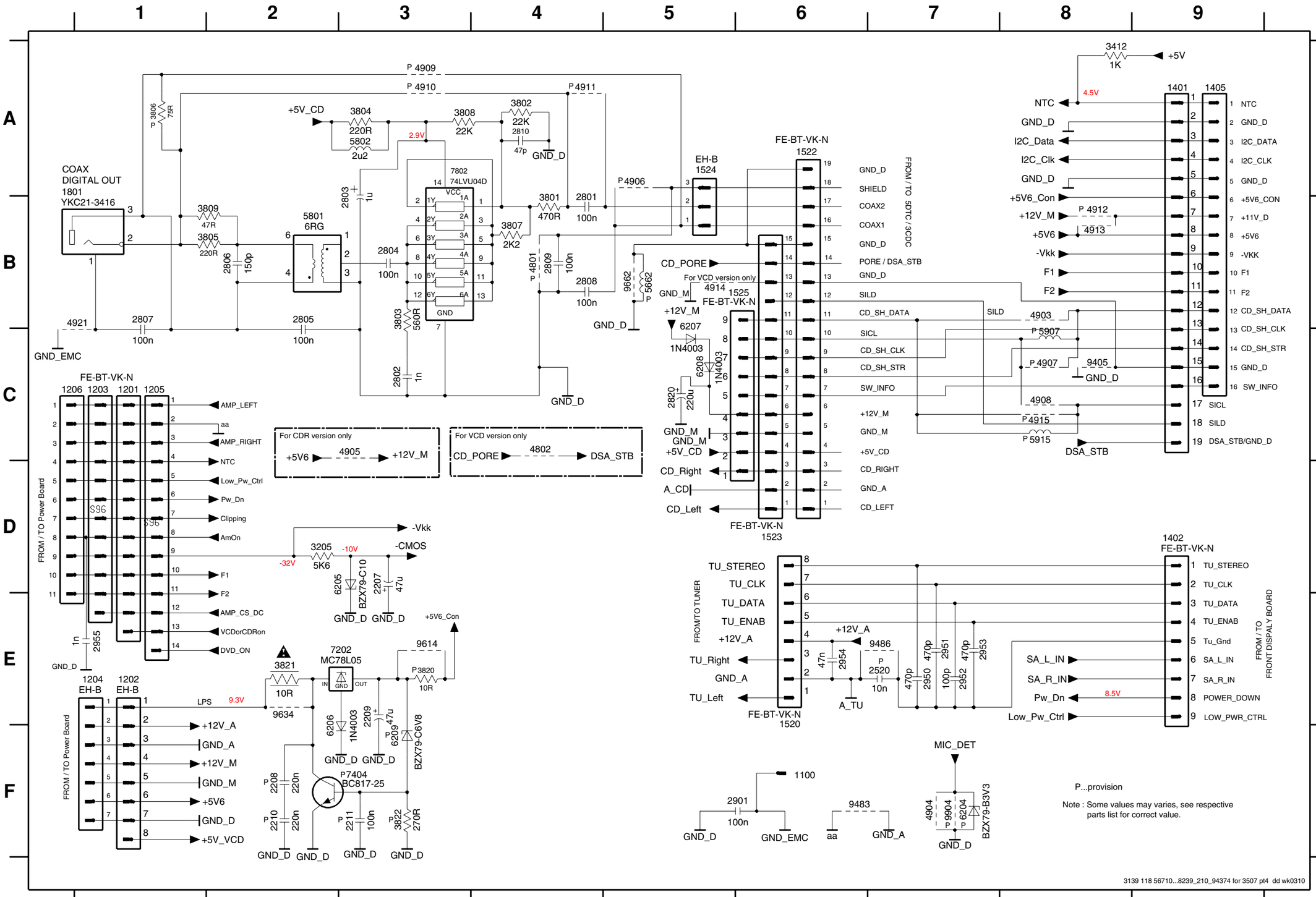
Note : Some values may varies, see respective parts list for correct value.

3139 118 56710...8239_210_94374 for 3507 pt4 dd wk0312

1501 F1	3546 G8	6841 E13
1502 E3	3547 C9	6642 E13
1503 F1	3548 F8	7201 C6
1504 I1	3549 C9	7501 D8
1505 E4	3550 G9	7661 H2
1506 B1	3591 A10	7662 H2
1510 F1	3592 H9	7663 I3
1531 C1	3593 A11	7693 C13
1532 C2	3594 H10	7694 G12
1691 B12	3641 D14	7695-A G14
1692 J14	3642 F14	7695-B H14
2201 B7	3643 E12	9522 D6
2202 C7	3645 D11	9618 B1
2203 D7	3646 F11	9654 B1
2204 C6	3661 G3	
2205 C5	3662 I3	
2206 C7	3663 H3	
2501 E2	3664 I3	
2502 F2	3665 H1	
2503 E3	3666 H1	
2504 F3	3667 H3	
2505 F5	3668 I3	
2506 F7	3669 I3	
2507 E7	3690 B14	
2511 A4	3699 B13	
2512 B4	3700 B13	
2513 B4	3707 E12	
2514 B4	3708 E12	
2515 F6	3712 I3	
2516 F7	3932 H11	
2521 A4	3933 H13	
2522 A4	3934 H11	
2523 F6	3935 H11	
2524 F6	3936 F13	
2531 D4	3937 I11	
2532 D4	3938 I11	
2533 F6	3939 G13	
2534 F7	3940 I11	
2535 C3	3941 I11	
2536 C3	3942 I11	
2541 B8	3943 H13	
2542 H8	3944 G13	
2543 C9	3945 G14	
2544 G9	3946 H13	
2546 F9	3947 I13	
2547 C10	3948 I14	
2548 G10	3949 I14	
2565 D9	3950 H14	
2567 C9	3951 I13	
2568 G9	3952 G13	
2589 A10	4501 F5	
2590 H9	4641 D14	
2591 A10	4642 E14	
2592 H10	4813 A12	
2593 A11	4920 E1	
2594 H10	5403 B1	
2641 D13	5404 B1	
2642 F13	5522 D6	
2661 G2	6201 C6	
2662 I2	6202 C6	
2663 H2	6641 E13	
2664 I2	6642 E13	
2665 H2	7201 C6	
2666 I2	7501 D8	
2667 H1	7661 H2	
2669 E1	7662 H2	
2696 B14	7663 I3	
2697 B13	7693 C13	
2698 A12	7694 G12	
2707 E11	7695-A G14	
2708 E12	7695-B H14	
2904 H1	9522 D6	
2908 E12	9618 B1	
2921 A12	9654 B1	
2923 C1		
2924 F5		
2927 I13		
2928 G13		
2929 I14		
2930 H14		
2933 I14		
2934 G14		
2935 H14		
2936 G13		
2937 I13		
2938 F13		
2939 H13		
3201 B6		
3202 C6		
3208 H14		
3435 D3		
3436 D3		
3437 D3		
3438 D3		
3501 E1		
3502 F1		
3503 E2		
3504 F2		
3505 E2		
3506 F2		
3507 E3		
3508 E3		
3511 A3		
3512 B3		
3513 B3		
3514 B3		
3521 A3		
3522 A3		
3523 A3		
3524 A3		
3525 E6		
3526 E7		
3531 C3		
3532 C3		
3533 C3		
3534 C3		
3543 A9		
3544 H8		
3545 B9		

8-6

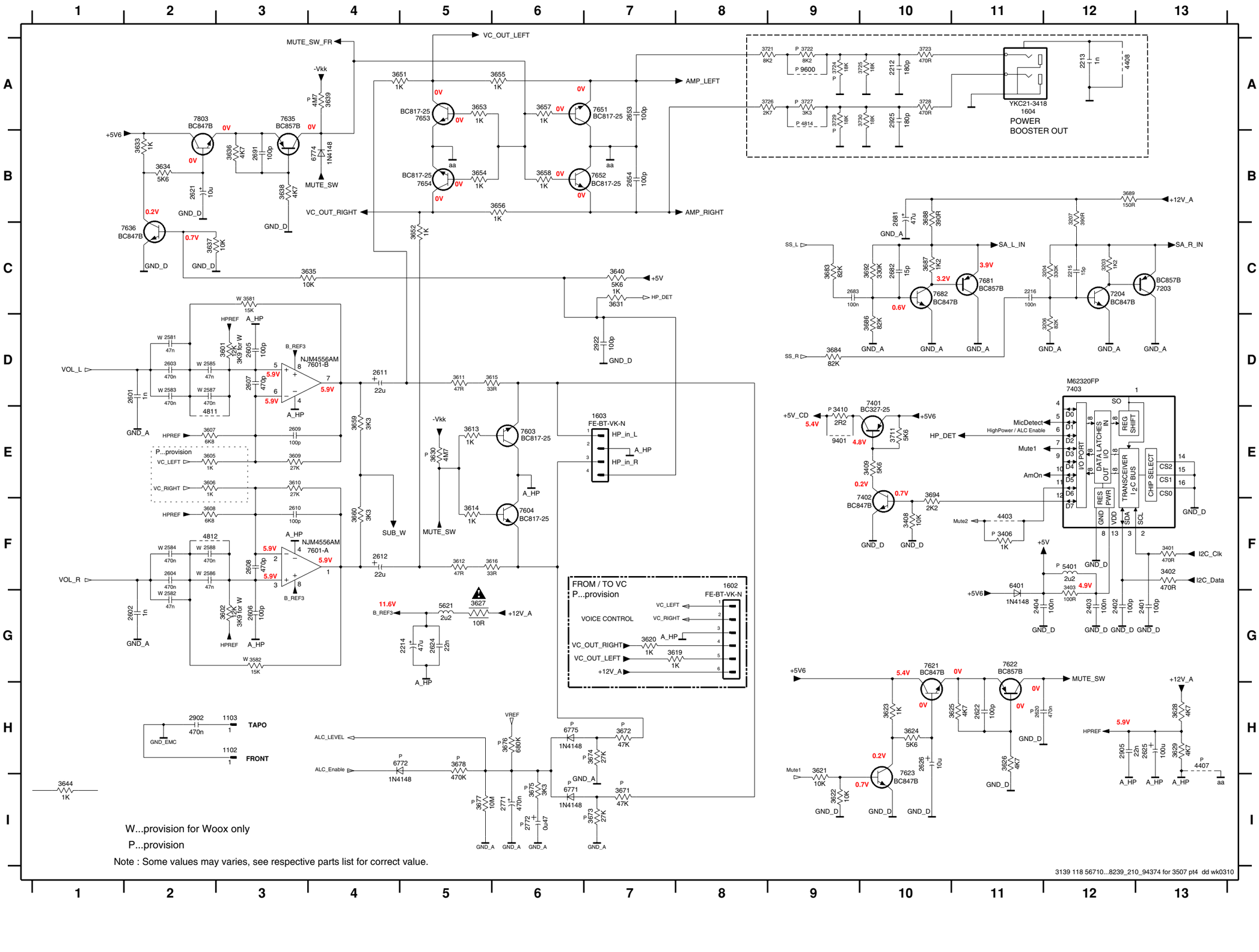
AF11 BOARD - CIRCUIT DIAGRAM (PART 2)



1100 F6
1201 C1
1202 E1
1203 C1
1204 E1
1205 C1
1206 C1
1401 A9
1402 D9
1405 A9
1520 E6
1522 A6
1523 D6
1524 A5
1525 B5
1801 A1
2207 D3
2208 F2
2209 E3
2210 F2
2211 F3
2520 E7
2801 B4
2802 C3
2803 B3
2804 B3
2805 B2
2806 B2
2807 B1
2808 B4
2809 B4
2810 A4
2820 C5
2901 F6
2950 E7
2951 E7
2952 E7
2953 E7
2954 E6
2955 E1
3205 D2
3412 A8
3801 B4
3802 A4
3803 B3
3804 A3
3805 B2
3806 A1
3807 B4
3808 A3
3809 B2
3820 E3
3821 E2
3822 F3
4801 B4
4802 C4
4903 B8
4904 F7
4905 C3
4906 A5
4907 C8
4908 C8
4909 A3
4910 A3
4911 A4
4912 B8
4913 B8
4914 B5
4915 C8
4921 B1
5662 B5
5801 B2
5802 A3
5907 C8
5915 C8
6204 F7
6205 D3
6206 F2
6207 B5
6208 C5
6209 F3
7202 E3
7404 F3
7802 A3
9405 C8
9483 F6
9486 E7
9614 E3
9634 E2
9662 B5
9904 F7

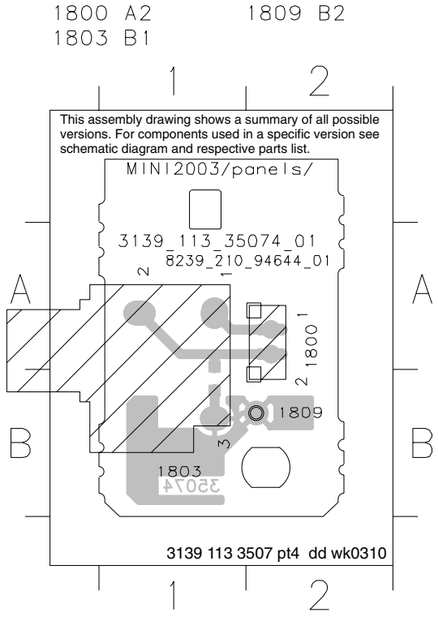
8-7

AF11 BOARD - CIRCUIT DIAGRAM (PART 3)

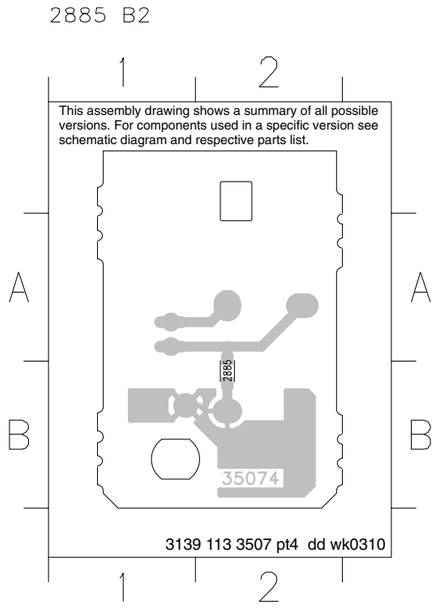


1102	H3	3671	I7
1103	H3	3672	H7
1602	F8	3673	I7
1603	E7	3674	H7
1604	A11	3675	I6
2212	A10	3676	H6
2213	A12	3677	I5
2214	G5	3678	H5
2215	C12	3683	C9
2216	C11	3684	D9
2401	G13	3686	D10
2402	G12	3687	C10
2403	G12	3688	B10
2404	G11	3689	B12
2581	D2	3692	C10
2582	G2	3694	E10
2583	D2	3711	E10
2584	F2	3721	A8
2585	D2	3722	A9
2586	F2	3723	A10
2587	D2	3724	A9
2588	F2	3725	A10
2601	D2	3726	A8
2602	G2	3727	A9
2603	D2	3728	A10
2604	F2	3729	A9
2605	D3	3730	A10
2606	G3	4403	F11
2607	D3	4407	H13
2608	F3	4408	A12
2609	E3	4811	E2
2610	F3	4812	F2
2611	D4	4814	A9
2612	F4	5401	F12
2620	H11	5621	G5
2621	B2	6401	F11
2622	H11	6771	I6
2624	G5	6772	H5
2625	H13	6774	B4
2626	H10	6775	H6
2653	A7	7203	C13
2654	B7	7204	C12
2681	B10	7401	D10
2682	C10	7402	F10
2683	C9	7403	D12
2691	B3	7601-A	F3
2771	I6	7601-B	D3
2772	I6	7603	E6
2902	H2	7604	F6
2905	H12	7621	G10
2922	D7	7622	G11
2925	A10	7623	I10
3203	C12	7635	A3
3204	C12	7636	C2
3206	D12	7651	A7
3207	B12	7652	B7
3401	F13	7653	A5
3402	F13	7654	B5
3403	F12	7681	C11
3406	F11	7682	C10
3408	F10	7803	A2
3409	E10	9401	E9
3410	E9	9600	A9
3581	C3		
3582	G3		
3601	D3		
3602	G3		
3605	E2		
3606	E2		
3607	E2		
3608	F2		
3609	E3		
3610	E3		
3611	D5		
3612	F5		
3613	E5		
3614	F5		
3615	D5		
3616	F5		
3619	G7		
3620	G7		
3621	H9		
3622	I9		
3623	H10		
3624	H10		
3625	H11		
3626	H11		
3627	G5		
3628	H13		
3629	H13		
3630	E5		
3631	C7		
3633	B2		
3634	B2		
3635	C4		
3636	B3		
3637	C2		
3638	B3		
3639	A4		
3640	C7		
3644	I1		
3651	A4		
3652	C5		
3653	A5		
3654	B5		
3655	A6		
3656	B6		
3657	A6		
3658	B6		
3659	E4		
3660	F4		

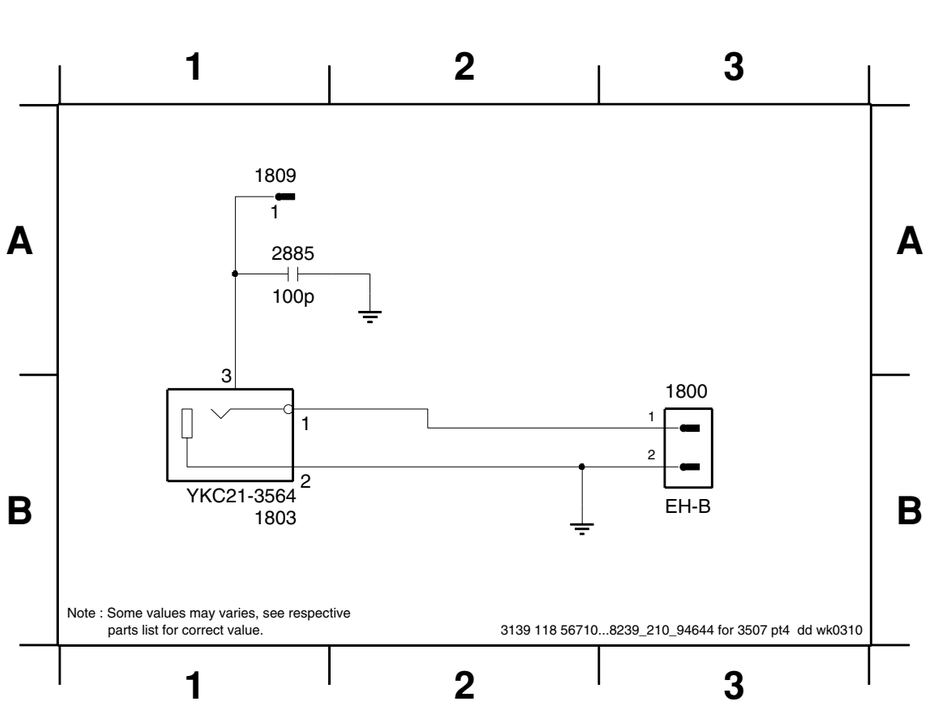
VIDEO OUT CINCH BOARD - COMPONENT LAYOUT



VIDEO OUT CINCH BOARD - CHIP LAYOUT


2885 B2
1 2
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
A
B
2885
35074
3139 113 3507 pt4 dd wk0310

VIDEO OUT CINCH BOARD - CIRCUIT DIAGRAM



ELECTRICAL PARTS LIST - AF11 BOARD

MISCELLANEOUS

1206	4822 267 11039	Flex Connector 11P
1401	4822 265 11553	Flex Connector 19P
1402	2422 025 14518	Flex Connector 9P
1501	4822 265 20553	Cinch Socket - Aux in
1504	4822 265 20553	Cinch Socket - Line out
1520	4822 265 11515	Flex Connector 8P
1523	4822 265 10981	Flex Connector 15P
1531	4822 267 10953	Flex Connector 7P
1603	4822 267 10733	Flex Connector 4P
1692	4822 265 11515	Flex Connector 8P
1803	4822 267 31996	Cinch Socket - Video out

CAPACITORS

2201	4822 124 40207	100uF 20% 25V
2202	4822 124 81151	22uF 50V
2203	4822 124 40433	47uF 20% 25V
2204	4822 124 40196	220uF 20% 16V
2205	4822 126 14238	2,2nF 50V
2206	3198 017 42230	22nF 50V
2207	4822 124 40433	47uF 20% 25V
2209	4822 124 40433	47uF 20% 25V
2214	4822 124 40433	47uF 20% 25V
2215	4822 122 33752	15pF 5% 50V
2216	2238 586 59812	100nF +80/-20% 50V
2401	2020 552 94427	100pF 5% 50V
2402	2020 552 94427	100pF 5% 50V
2403	2238 586 59812	100nF +80/-20% 50V
2404	2238 586 59812	100nF +80/-20% 50V
2501	4822 126 13881	470pF 5% 50V
2502	4822 126 13881	470pF 5% 50V
2503	4822 124 40756	1uF 20% 100V
2504	4822 124 40756	1uF 20% 100V
2505	2020 552 94427	100pF 5% 50V
2506	2020 552 94427	100pF 5% 50V
2507	2238 586 59812	100nF +80/-20% 50V
2511	4822 124 40756	1uF 20% 100V
2512	4822 124 40756	1uF 20% 100V
2513	3198 016 31020	1nF 25V
2514	3198 016 31020	1nF 25V
2515	2020 552 94427	100pF 5% 50V
2516	2020 552 94427	100pF 5% 50V
2521	2238 586 59812	100nF +80/-20% 50V
2522	2238 586 59812	100nF +80/-20% 50V
2523	2020 552 94427	100pF 5% 50V
2524	2020 552 94427	100pF 5% 50V
2531	4822 124 40769	4,7uF 20% 100V
2532	4822 124 40769	4,7uF 20% 100V
2533	2020 552 94427	100pF 5% 50V
2534	2020 552 94427	100pF 5% 50V
2535	4822 124 40769	4,7uF 20% 100V
2536	4822 124 40769	4,7uF 20% 100V
2541	4822 124 41407	0,47uF 20% 63V
2542	4822 124 41407	0,47uF 20% 63V
2543	4822 126 14549	33nF 16V
2544	4822 126 14549	33nF 16V
2546	4822 121 10686	4,7nF 10% 50V
2547	5322 126 11579	3,3nF 10% 63V
2548	5322 126 11579	3,3nF 10% 63V
2565	4822 121 10686	4,7nF 10% 50V
2567	3198 016 31020	1nF 25V
2568	3198 016 31020	1nF 25V
2589	4822 121 42408	220nF 5% 63V
2590	4822 121 42408	220nF 5% 63V
2591	4822 121 51252	470nF 5% 63V
2592	4822 121 51252	470nF 5% 63V
2593	4822 121 51252	470nF 5% 63V
2594	4822 121 51252	470nF 5% 63V
2601	3198 016 31020	1nF 25V
2602	3198 016 31020	1nF 25V
2603	4822 121 51252	470nF 5% 63V
2604	4822 121 51252	470nF 5% 63V
2605	2020 552 94427	100pF 5% 50V
2606	2020 552 94427	100pF 5% 50V
2607	4822 126 13881	470pF 5% 50V
2608	4822 126 13881	470pF 5% 50V
2609	2020 552 94427	100pF 5% 50V
2610	2020 552 94427	100pF 5% 50V
2611	4822 124 40764	22uF 100 V
2612	4822 124 40764	22uF 100 V
2621	4822 124 40248	10uF 20% 63V
2622	2020 552 94427	100pF 5% 50V
2624	2238 916 15641	22nF 10% 25V
2625	4822 124 41584	100uF 20% 10V
2626	4822 124 40248	10uF 20% 63V
2641	3198 016 31020	1nF 25V
2642	3198 016 31020	1nF 25V
2653	2020 552 94427	100pF 5% 50V
2654	2020 552 94427	100pF 5% 50V
2661	4822 124 40756	1uF 20% 100V
2662	4822 124 40756	1uF 20% 100V
2663	3198 016 31020	1nF 25V
2664	3198 016 31020	1nF 25V
2665	4822 126 13881	470pF 5% 50V
2666	4822 126 13881	470pF 5% 50V
2667	2238 586 59812	100nF +80/-20% 50V
2669	2238 586 59812	100nF +80/-20% 50V
2681	4822 124 40433	47uF 20% 25V
2682	4822 122 33752	15pF 5% 50V
2683	2238 586 59812	100nF +80/-20% 50V
2691	2020 552 94427	100pF 5% 50V
2707	2020 552 94427	100pF 5% 50V
2708	2020 552 94427	100pF 5% 50V
2771	4822 124 41407	0,47uF 20% 63V
2820	4822 124 40196	220uF 20% 16V

8-9

ELECTRICAL PARTS LIST - AF11 BOARD

ELECTRICAL PARTS LIST - AF11 BOARD

CAPACITORS

2885	5322 122 32531	100pF 5% 50V
2901	2020 561 90365	100nF +80/-20% 50V
2904	2238 586 59812	100nF +80/-20% 50V
2905	2238 916 15641	22nF 10% 25V
2908	2238 586 59812	100nF +80/-20% 50V
2922	2020 552 94427	100pF 5% 50V
2927	4822 126 14043	1uF +80/-20% 16V
2928	4822 126 14043	1uF +80/-20% 16V
2929	4822 126 14043	1uF +80/-20% 16V
2930	4822 126 14043	1uF +80/-20% 16V
2933	4822 122 33753	150pF 5% 50V
2934	4822 122 33753	150pF 5% 50V
2935	2020 012 93583	100uF 20% 25V
2936	4822 126 13956	68pF 5% 63V
2937	4822 126 13956	68pF 5% 63V
2938	2020 552 94427	100pF 5% 50V
2939	2020 552 94427	100pF 5% 50V
2950	4822 126 13881	470pF 5% 50V
2951	4822 126 13881	470pF 5% 50V
2952	2020 552 94427	100pF 5% 50V
2953	4822 126 13881	470pF 5% 50V
2954	3198 017 34730	47nF 16V
2955	3198 016 31020	1nF 25V

RESISTORS

3201	4822 117 12968	820R 5% 0,62W
3202	4822 051 30391	390R 5% 0,062W
3203	4822 117 11817	1k2 1% 1/16W
3204	4822 051 30334	330k 5% 0,062W
3205	4822 116 52289	5k6 5% 0,5W
3206	4822 117 12864	82k 5% 0,6W
3207	4822 051 30391	390R 5% 0,062W
3208	4822 051 30472	4k7 5% 0,062W
3401	4822 051 30471	470R 5% 0,062W
3402	4822 051 30471	470R 5% 0,062W
3403	4822 116 52175	100R 5% 0,5W
3408	4822 051 30103	10k 5% 0,062W
3409	4822 051 30562	5k6 5% 0,063W
3412	4822 050 11002	1k 1% 0,4W
3435	4822 116 83883	470R 5% 0,5W
3436	4822 116 83883	470R 5% 0,5W
3501	4822 051 30472	4k7 5% 0,062W
3502	4822 051 30472	4k7 5% 0,062W
3503	4822 051 30123	12k 5% 0,062W
3504	4822 051 30123	12k 5% 0,062W
3505	4822 051 30332	3k3 5% 0,062W
3506	4822 051 30332	3k3 5% 0,062W
3511	4822 051 30681	680R 5% 0,062W
3512	4822 051 30681	680R 5% 0,062W
3513	4822 117 12902	8k2 1% 0,063W
3514	4822 117 12902	8k2 1% 0,063W
3521	4822 051 30102	1k 5% 0,062W
3522	4822 051 30102	1k 5% 0,062W
3525	4822 051 30471	470R 5% 0,062W
3526	4822 051 30471	470R 5% 0,062W
3531	4822 051 30152	1k5 5% 0,062W
3532	4822 051 30152	1k5 5% 0,062W
3533	4822 051 30273	27k 5% 0,062W
3534	4822 051 30273	27k 5% 0,062W
3543	4822 051 30153	15k 5% 0,062W
3544	4822 051 30153	15k 5% 0,062W
3545	4822 051 30562	5k6 5% 0,063W
3546	4822 051 30562	5k6 5% 0,063W
3547	4822 051 30332	3k3 5% 0,062W
3548	4822 051 30332	3k3 5% 0,062W
3549	4822 051 30562	5k6 5% 0,063W
3550	4822 051 30562	5k6 5% 0,063W
3591	4822 117 12902	8k2 1% 0,063W
3592	4822 117 12902	8k2 1% 0,063W
3593	4822 051 30562	5k6 5% 0,063W
3594	4822 051 30562	5k6 5% 0,063W
3601	4822 116 52238	12k 5% 0,5W
3602	4822 116 52238	12k 5% 0,5W
3607	4822 051 30682	6k8 5% 0,062W
3608	4822 116 83961	6k8 5%
3609	4822 051 30273	27k 5% 0,062W
3610	4822 051 30273	27k 5% 0,062W
3611	4822 051 30479	47R 5% 0,062W
3612	4822 051 30479	47R 5% 0,062W
3613	4822 051 30102	1k 5% 0,062W
3614	4822 051 30102	1k 5% 0,062W
3615	4822 051 30339	33R 5% 0,062W
3616	4822 051 30339	33R 5% 0,062W
3621	4822 051 30103	10k 5% 0,062W
3622	4822 051 30103	10k 5% 0,062W
3623	4822 051 30102	1k 5% 0,062W
3624	4822 051 30562	5k6 5% 0,063W
3625	4822 051 30472	4k7 5% 0,062W
3626	4822 051 30472	4k7 5% 0,062W
3627	4822 052 10109 ⚠	10R 5% 0,33W
3628	4822 116 52283	4k7 5% 0,5W
3629	4822 051 30472	4k7 5% 0,062W
3631	4822 050 11002	1k 1% 0,4W
3633	4822 051 30102	1k 5% 0,062W
3634	4822 051 30562	5k6 5% 0,063W
3635	4822 051 30103	10k 5% 0,062W
3636	4822 051 30472	4k7 5% 0,062W
3637	4822 051 30103	10k 5% 0,062W
3638	4822 051 30472	4k7 5% 0,062W
3640	4822 116 52289	5k6 5% 0,5W
3645	4822 051 30221	220R 5% 0,062W
3646	4822 051 30221	220R 5% 0,062W
3651	4822 051 30102	1k 5% 0,062W
3652	4822 051 30102	1k 5% 0,062W
3653	4822 051 30102	1k 5% 0,062W
3654	4822 051 30102	1k 5% 0,062W
3655	4822 051 30102	1k 5% 0,062W
3656	4822 051 30102	1k 5% 0,062W
3657	4822 051 30102	1k 5% 0,062W
3658	4822 051 30102	1k 5% 0,062W
3661	4822 051 30272	2k7 5% 0,062W
3662	4822 051 30272	2k7 5% 0,062W
3663	4822 116 52256	2k2 5% 0,5W
3664	4822 051 30222	2k2 5% 0,062W
3665	4822 051 30471	470R 5% 0,062W
3666	4822 051 30471	470R 5% 0,062W
3668	4822 051 30472	4k7 5% 0,062W
3669	4822 051 30103	10k 5% 0,062W
3683	4822 117 12864	82k 5% 0,6W
3684	4822 117 12864	82k 5% 0,6W
3686	4822 117 12864	82k 5% 0,6W
3687	4822 117 11817	1k2 1% 1/16W
3688	4822 051 30391	390R 5% 0,062W
3689	4822 051 30151	150R 5% 0,062W
3692	4822 051 30334	330k 5% 0,062W
3694	4822 051 30222	2k2 5% 0,062W
3707	4822 050 11002	1k 1% 0,4W
3708	4822 050 11002	1k 1% 0,4W
3711	4822 051 30562	5k6 5% 0,063W
3821	4822 052 10109 ⚠	10R 5% 0,33W
3932	4822 051 30103	10k 5% 0,062W
3933	4822 051 30562	5k6 5% 0,063W
3934	4822 116 83882	39k 5% 0,5W
3935	4822 051 30123	12k 5% 0,062W
3936	4822 051 30562	5k6 5% 0,063W
3937	4822 051 30103	10k 5% 0,062W
3938	4822 051 30103	10k 5% 0,062W
3939	4822 051 30689	68R 5% 0,063W
3940	4822 051 30123	12k 5% 0,062W
3941	4822 051 30103	10k 5% 0,062W
3942	4822 051 30393	39k 5% 0,062W
3943	4822 051 30689	68R 5% 0,063W
3944	4822 051 30152	1k5 5% 0,062W
3945	4822 051 30153	15k 5% 0,062W
3946	4822 051 30223	22k 5% 0,062W
3947	4822 051 30152	1k5 5% 0,062W
3948	4822 051 30153	15k 5% 0,062W
3949	4822 051 30223	22k 5% 0,062W
3950	4822 051 30392	3k9 5% 0,063W
3951	4822 117 12968	820R 5% 0,62W
3952	4822 117 12968	820R 5% 0,62W
4100	4822 051 30008	0R Jumper 0603
4101	4822 051 30008	0R Jumper 0603
4102	4822 051 30008	0R Jumper 0603
4104	4822 051 30008	0R Jumper 0603
4116	4822 051 30008	0R Jumper 0603
4122	4822 051 30008	0R Jumper 0603
4130	4822 051 30008	0R Jumper 0603
4132	4822 051 30008	0R Jumper 0603
4133	4822 051 30008	0R Jumper 0603
4135	4822 051 30008	0R Jumper 0603
4137	4822 051 30008	0R Jumper 0603
4138	4822 051 30008	0R Jumper 0603
4139	4822 051 30008	0R Jumper 0603
4141	4822 051 30008	0R Jumper 0603
4142	4822 051 30008	0R Jumper 0603
4144	4822 051 30008	0R Jumper 0603
4145	4822 051 30008	0R Jumper 0603
4146	4822 051 30008	0R Jumper 0603
4148	4822 051 30008	0R Jumper 0603
4149	4822 051 30008	0R Jumper 0603
4150	4822 051 30008	0R Jumper 0603
4151	4822 051 30008	0R Jumper 0603
4152	4822 051 30008	0R Jumper 0603
4153	4822 051 30008	0R Jumper 0603
4201	4822 051 30008	0R Jumper 0603
4202	4822 051 30008	0R Jumper 0603
4203	4822 051 30008	0R Jumper 0603
4204	4822 051 30008	0R Jumper 0603
4206	4822 051 30008	0R Jumper 0603
4207	4822 051 30008	0R Jumper 0603
4208	4822 051 30008	0R Jumper 0603
4209	4822 051 30008	0R Jumper 0603
4210	4822 051 30008	0R Jumper 0603
4211	4822 051 30008	0R Jumper 0603
4212	4822 051 30008	0R Jumper 0603
4301	4822 051 30008	0R Jumper 0603
4305	4822 051 30008	0R Jumper 0603
4306	4822 051 30008	0R Jumper 0603
4313	4822 051 30008	0R Jumper 0603
4319	4822 051 30008	0R Jumper 0603
4331	4822 051 30008	0R Jumper 0603
4332	4822 051 30008	0R Jumper 0603
4333	4822 051 30008	0R Jumper 0603
4334	4822 051 30008	0R Jumper 0603
4336	4822 051 30008	0R Jumper 0603
4337	4822 051 30008	0R Jumper 0603
4338	4822 051 30008	0R Jumper 0603
4342	4822 051 30008	0R Jumper 0603
4349	4822 051 30008	0R Jumper 0603
4374	4822 051 30008	0R Jumper 0603
4403	4822 051 30008	0R Jumper 0603
4407	4822 051 30008	0R Jumper 0603
4409	4822 051 30008	0R Jumper 0603
4410	4822 051 30008	0R Jumper 0603
4411	4822 051 30008	0R Jumper 0603
4501	4822 051 30008	0R Jumper 0603
4641	4822 051 30008	0R Jumper 0603

8-10

ELECTRICAL PARTS LIST - AF11 BOARD

RESISTORS

4642	4822 051 30008	0R Jumper 0603
4802	4822 051 30008	0R Jumper 0603
4811	4822 051 30008	0R Jumper 0603
4812	4822 051 30008	0R Jumper 0603
4903	4822 051 30008	0R Jumper 0603
4904	4822 051 30008	0R Jumper 0603
4908	4822 051 30008	0R Jumper 0603
4913	4822 051 30008	0R Jumper 0603
4916	4822 051 30008	0R Jumper 0603
4917	4822 051 30008	0R Jumper 0603
4920	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5522	4822 526 10704	FXD IND BEAD 100MHz 50R
5621	4822 156 21721	Coil 2,2uH 10%

DIODES

6201	4822 130 30621	1N4148
6202	4822 130 30862	BZX79-C9V1
6205	4822 130 61219	BZX79-C10
6206	4822 130 31878	1N4003G
6207	4822 130 31878	1N4003G
6208	4822 130 31878	1N4003G
6401	4822 130 30621	1N4148
6774	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7201	5322 130 60159	BC847B
7202	4822 209 72042	MC78L05ACP
7203	4822 130 60373	BC857B
7204	5322 130 60159	BC847B
7401	4822 130 41246	BC327-25
7402	5322 130 60159	BC847B
7403	4822 209 17345	M62320FP
7501	9322 150 74668	TDA7468D
7601	4822 209 31378	NJM4556AM
7603	4822 130 42804	BC817-25
7604	4822 130 42804	BC817-25
7621	5322 130 60159	BC847B
7622	4822 130 60373	BC857B
7623	5322 130 60159	BC847B
7635	4822 130 60373	BC857B
7636	5322 130 60159	BC847B
7651	4822 130 42804	BC817-25
7652	4822 130 42804	BC817-25
7653	4822 130 42804	BC817-25
7654	4822 130 42804	BC817-25
7661	5322 130 60159	BC847B
7662	5322 130 60159	BC847B
7663	4822 130 60373	BC857B
7681	4822 130 60373	BC857B
7682	5322 130 60159	BC847B
7694	5322 209 11102	HEF4052BT
7695	4822 209 83357	NJM4560M
7803	5322 130 60159	BC847B

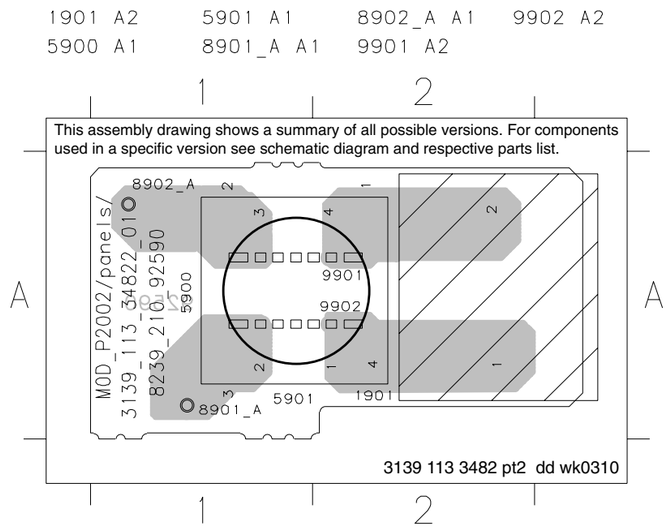
Note : Only the parts mentioned in this list are normal service spare parts.

P2003 135/165W MODULE

TABLE OF CONTENTS

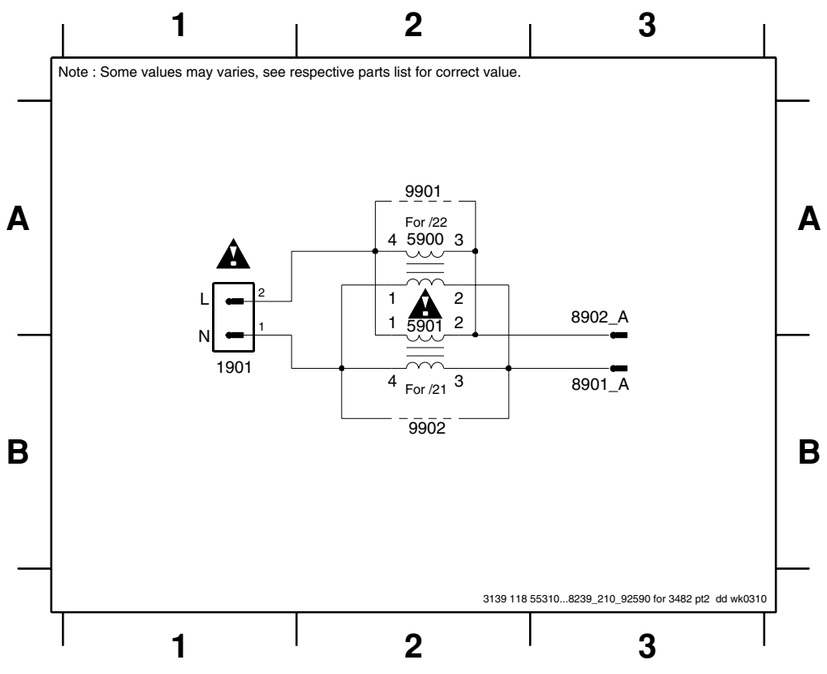
Mains Socket Board - Layout & Circuit Duagram 9-1
Mains Board - Component Layout 9-2
Mains Board - Circuit Diagram 9-3
L/R Amp. & Supply Board - Component Layout 9-4
L/R Amp. & Supply Board - Circuit Diagram (Part 1) 9-5
L/R Amp. & Supply Board - Circuit Diagram (Part 2) 9-6
L/R Amp. & Supply Board - Circuit Diagram (Part 3) 9-7
Electrical parts list..... 9-7

MAINS SOCKET BOARD - COMPONENT LAYOUT



MAINS SOCKET BOARD - CIRCUIT DIAGRAM

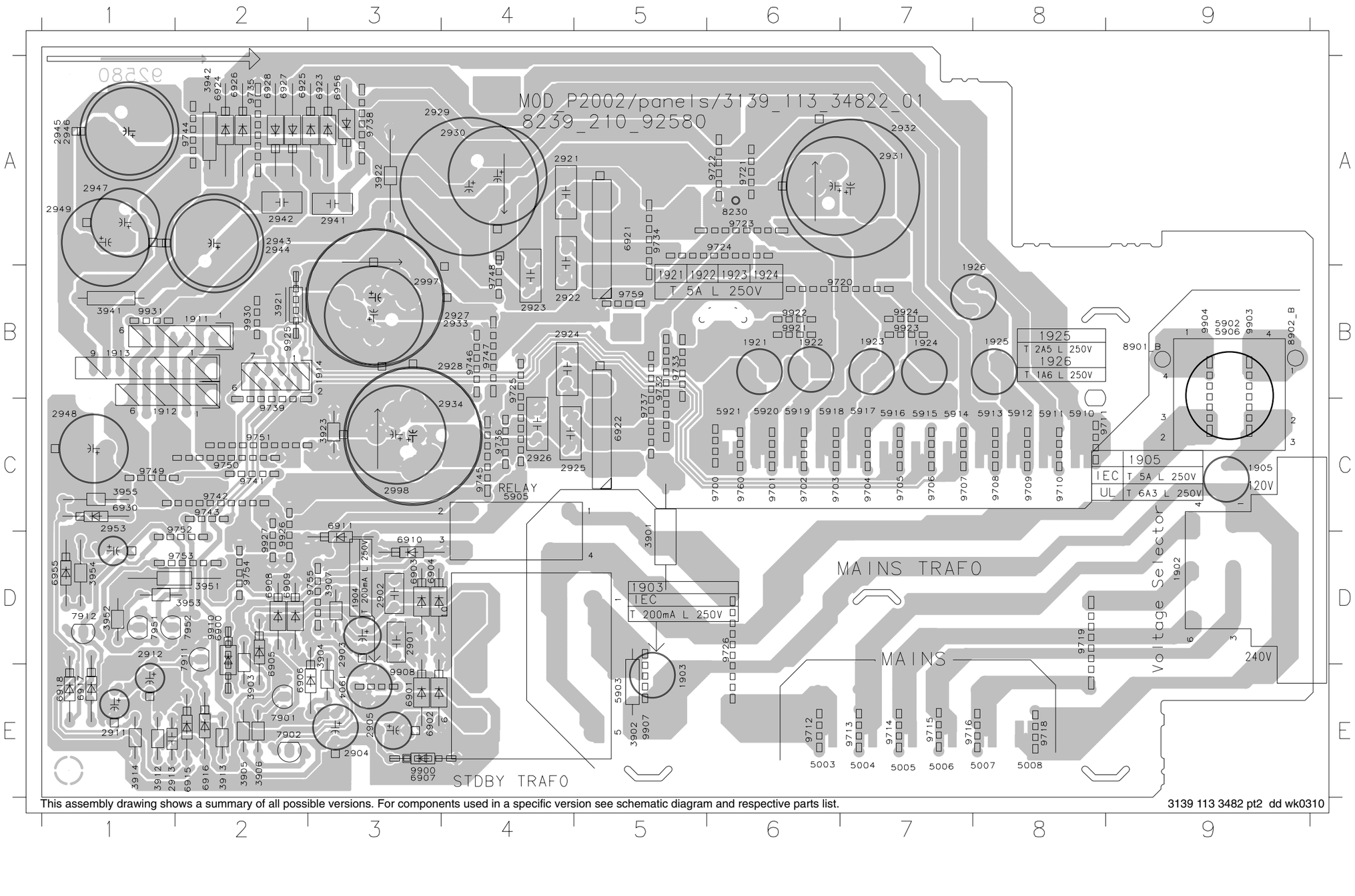
1901 B1 **5901 A2** **8902_A A3** **9902 B2**
5900 A2 **8901_A B3** **9901 A2**



9-2

MAINS BOARD - COMPONENT LAYOUT

1902 D9	1926 B8	2925 C4	2944 A2	3905 E2	3953 D2	5910 C8	6901 E3	6917 E1	7901 E2	9704 C7	9718 E8	9736 C4	9750 C2	9910 D2
1903 E5	2901 D3	2926 C4	2945 A1	3906 E2	3954 D1	5911 C8	6902 E3	6918 E1	7902 E2	9705 C7	9719 D8	9737 C5	9751 C2	9921 B6
1904 E3	2902 D3	2927 B4	2946 A1	3907 D3	3955 C1	5912 C8	6903 D3	6921 A5	7911 D2	9706 C7	9720 B6	9738 A3	9752 C2	9922 B6
1905 C9	2903 D3	2928 B4	2947 A1	3912 E1	5003 E6	5913 C8	6904 D3	6922 C5	7912 D1	9707 C7	9721 A6	9739 C2	9753 D2	9923 B7
1911 B2	2904 E3	2929 A3	2948 C1	3913 E2	5004 E7	5914 C7	6905 D2	6923 A3	7951 D1	9708 C8	9722 A6	9741 C2	9754 D2	9924 B7
1912 C1	2905 E3	2930 A4	2949 A1	3914 E1	5005 E7	5915 C7	6906 E2	6924 A2	7952 D2	9709 C8	9723 A6	9742 C2	9755 D3	9925 B2
1913 B1	2911 E1	2931 A7	2953 C1	3921 B2	5006 E7	5916 C7	6907 E3	6925 A2	8230 A6	9710 C8	9724 A6	9743 C2	9759 B5	9926 D2
1914 B3	2912 D1	2932 A7	2997 B3	3922 A3	5007 E8	5917 C7	6908 D2	6926 A2	8901_B B9	9711 C8	9725 B4	9744 A2	9760 C6	9927 D2
1921 B6	2913 E1	2933 B4	2998 C3	3923 C3	5008 E8	5918 C6	6909 D2	6927 A2	8902_B B9	9712 E6	9726 D6	9745 C4	9900 E3	9930 B2
1922 B6	2921 A4	2934 C4	3901 D5	3941 B1	5902 B9	5919 C6	6910 D3	6928 A2	9700 C6	9713 E7	9732 B5	9746 B4	9903 B9	9931 B1
1923 B7	2922 B4	2941 A3	3902 E5	3942 A2	5903 E5	5920 C6	6911 C3	6930 C1	9701 C6	9714 E7	9733 B5	9747 B4	9904 B9	
1924 B7	2923 B4	2942 A2	3903 E2	3951 D2	5905 C4	5921 C6	6915 E2	6955 D1	9702 C6	9715 E7	9734 A5	9748 B4	9907 E5	
1925 B8	2924 B4	2943 A2	3904 D3	3952 D1	5906 B9	6900 D2	6916 E2	6956 A3	9703 C6	9716 E7	9735 A2	9749 C1	9908 E3	

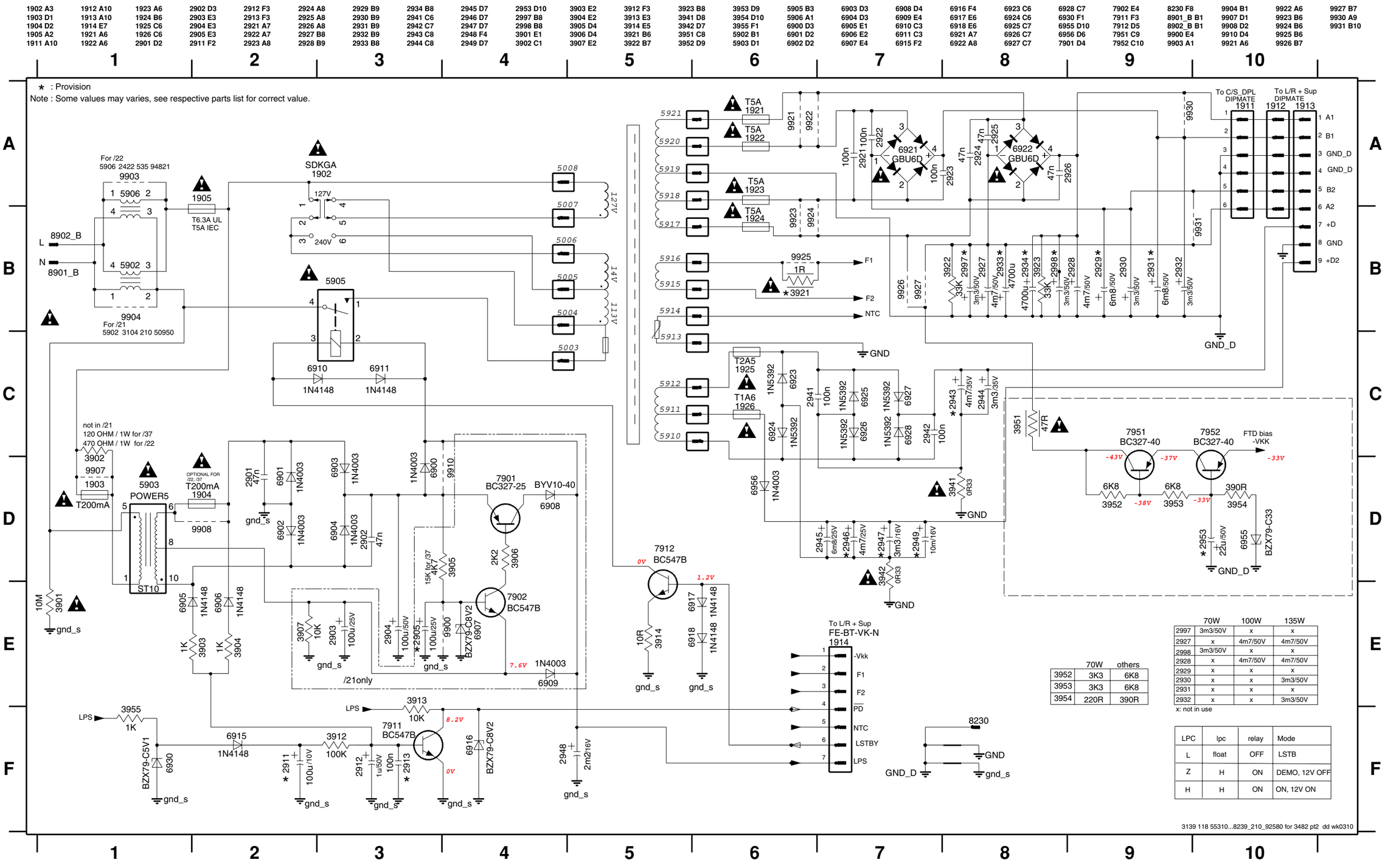


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3482 pt2 dd wk0310

9-3

MAINS BOARD - CIRCUIT DIAGRAM



9-4

LEFT/RIGHT AMPLIFIER & SUPPLY BOARD - COMPONENT VIEW

1250 B5
1251 C5
1252 B5
1259 A5
1260 A5
1261 A5
1262 A5
1263 A5
1264 A5
1280 C5
1300 C4
1321 B1
1322_A C2
1322_B B5
1323_A C2
1323_B B5
1330 A2
2250 A3
2251 A3
2252 A3
2253 A3
2254 C4
2255 C3
2256 C4
2257 C3
2258 C3
2259 C2
2260 B6
2261 B6
2262 A6
2263 A6
2265 C5
2300 C2
2320 C6
2321 C6
2322 C6
2323 C6
2324 A4
2325 A2
2328 A3
2329 A4
2330 A2
2331 A3
2332 A4
2333 A3
2334 A3
2335 A2
2336 A3
2339 A1
2340 A3
2341 A3
2342 B3
2343 B4
2344 B3
2345 C6
2350 C3
2352 B4
2353 C4
2355 B3
2360 C1
2361 C1
2362 C1
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2364 B1
2365 B1
2370 B1
2371 A2
2372 A3
2390 A4
2391 A2
3250 A2
3251 A2
3252 A2
3253 A2
3254 A2
3255 A3
3256 A3
3257 A3
3258 C2
3259 C2
3260 C2
3261 C2
3262 C3
3263 C4
3264 C2
3265 A5
3268 C5
3269 C6
3270 C5
3271 C5
3272 C5
3273 A6
3274 A6
3275 B6
3276 A6
3277 B6
3278 A5
3279 A4
3280 A5
3281 A6
3282 A6
3283 A6
3284 A6
3285 A6
3286 C5
3287 C5
3288 C5
3289 C6
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3292 C4
3295 A5
3300 C2
3301 C2
3302 C3
3303 C2
3304 C3
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3322 C6
3323 C6
3324 C6
3325 B6
3326 B6
3327 B6
3328 B6
3329 C6
3330 C6
3331 C6
3332 C6
3333 C6
3334 A4
3335 A4
3336 A3
3337 A4
3338 A4
3339 A4
3341 A3
3342 A1
3343 A2
3344 B3
3345 B4
3346 B4
3347 B3
3348 B3
3349 C2
3350 B2
3351 B1
3352 B2
3353 B2
3354 B3
3355 B2
3356 B3
3357 B3
3358 A3
3359 B2
3360 B1
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3362 B2
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3364 B2
3365 B2
3366 B2
3367 A3
3368 B1
3369 A1
3370 A1
3371 C1
3372 C1
3373 C1
3374 A1
3375 A1
3376 B1
3377 B3
3378 B3
3379 B3
3380 C3
3381 C2
3382 B1
3392 A2
3393 A2
3395 A2
3400 A4
3401 B4
3402 A5
3403 A4
3404 A3
3405 C3
3406 C3
3407 C3
6330 C1
6331 A1
6332 C3
6360 A1
7240 A4
7241 A4
7242 A4
7250 A2
7251 A3
7252 A2
7253 A3
7254 C1
7255 C2
7256 C3
7259 C5
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7261 A6
7262 A6
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7264 C5
7265 C5
7300 C3
7301 C4
7320 C6
7321 B6
7322 B6
7323 B6
7324 C6
7325 C6
7326 B2
7327 B3
7328 A2
7329 B3
7330 B2
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9252 C4
9253 C4
9320 A4
9321 A4
9323 B4
9329 C3
9330 A2
9331 A2
9333 A2
9341 B3
9342 C1
9343 B1
9355 B3
9356 B2
9360 B1
9361 A1
9362 A1
9363 B1
9452 C1
9453 B1
9455 A2
9456 C1
9457 B2
9458 B3
9460 B3
9462 A3
9465 B2
9467 A3
9468 B3
9470 B3
9472 C2
9473 C3
9474 C3
9475 B3
9476 B5
9477 B3
9478 B3
9481 B4
9482 B4
9483 C5
9484 C5
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9488 B4
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9490 B5
9492 B5
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9494 A4
9495 B5
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9498 A5
9499 A5
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9501 B4
9502 B5
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9507 B5
9508 B5
9509 A3
9510 A5
9512 A6
9514 A6
9515 A6
9516 B6
9517 B6
9519 A5
9520 B6
9521 B5
9522 B5
9524 B6
9525 B4
9526 C6
9527 C6
9528 B6
9529 A5
9530 A5
9531 B5
9532 A5
9533 C5
9534 C5
9535 C5
9536 C5
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9538 C5
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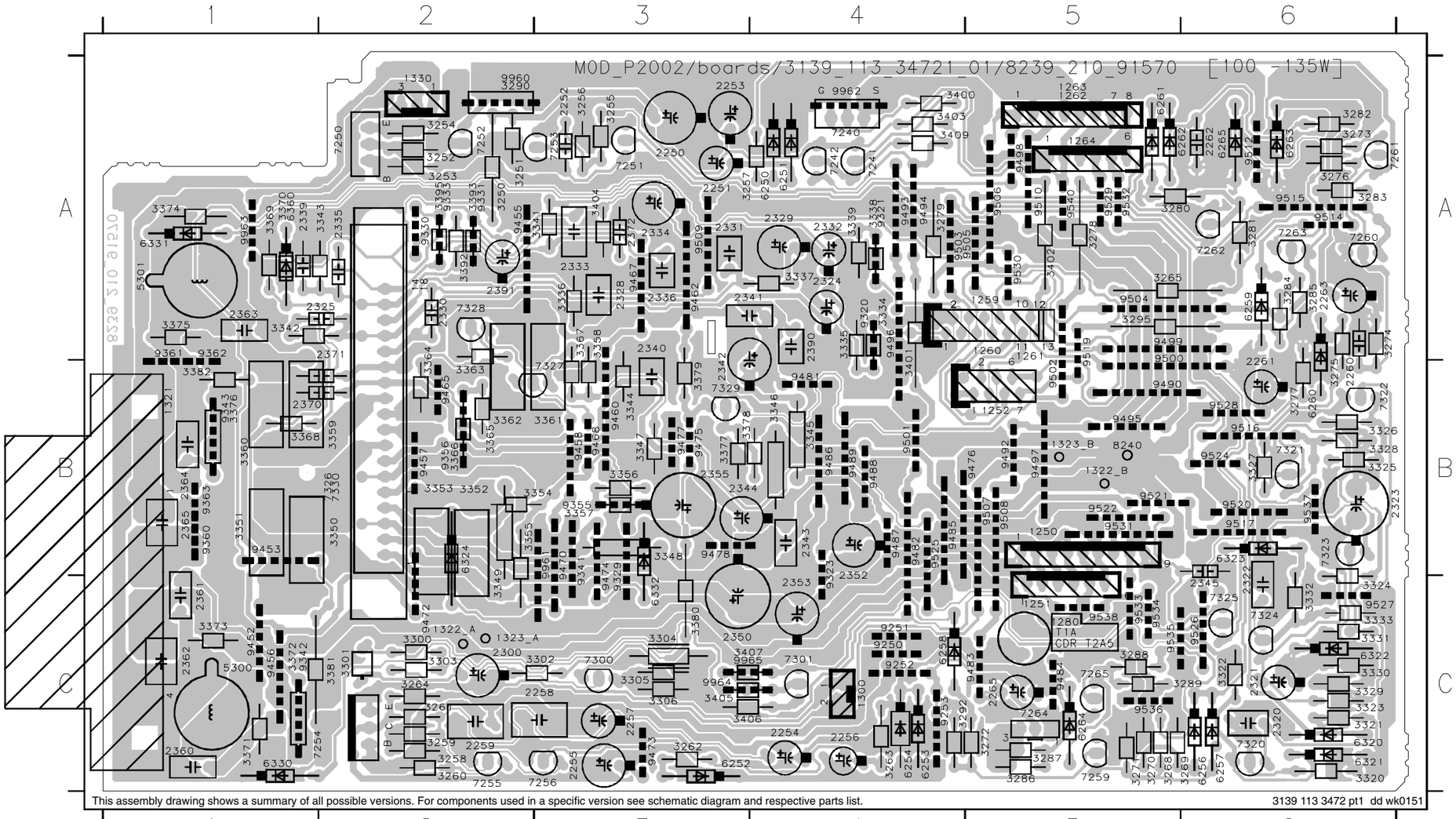
9961 B3
9962 A4
9963 A1
9964 C3
9965 C3

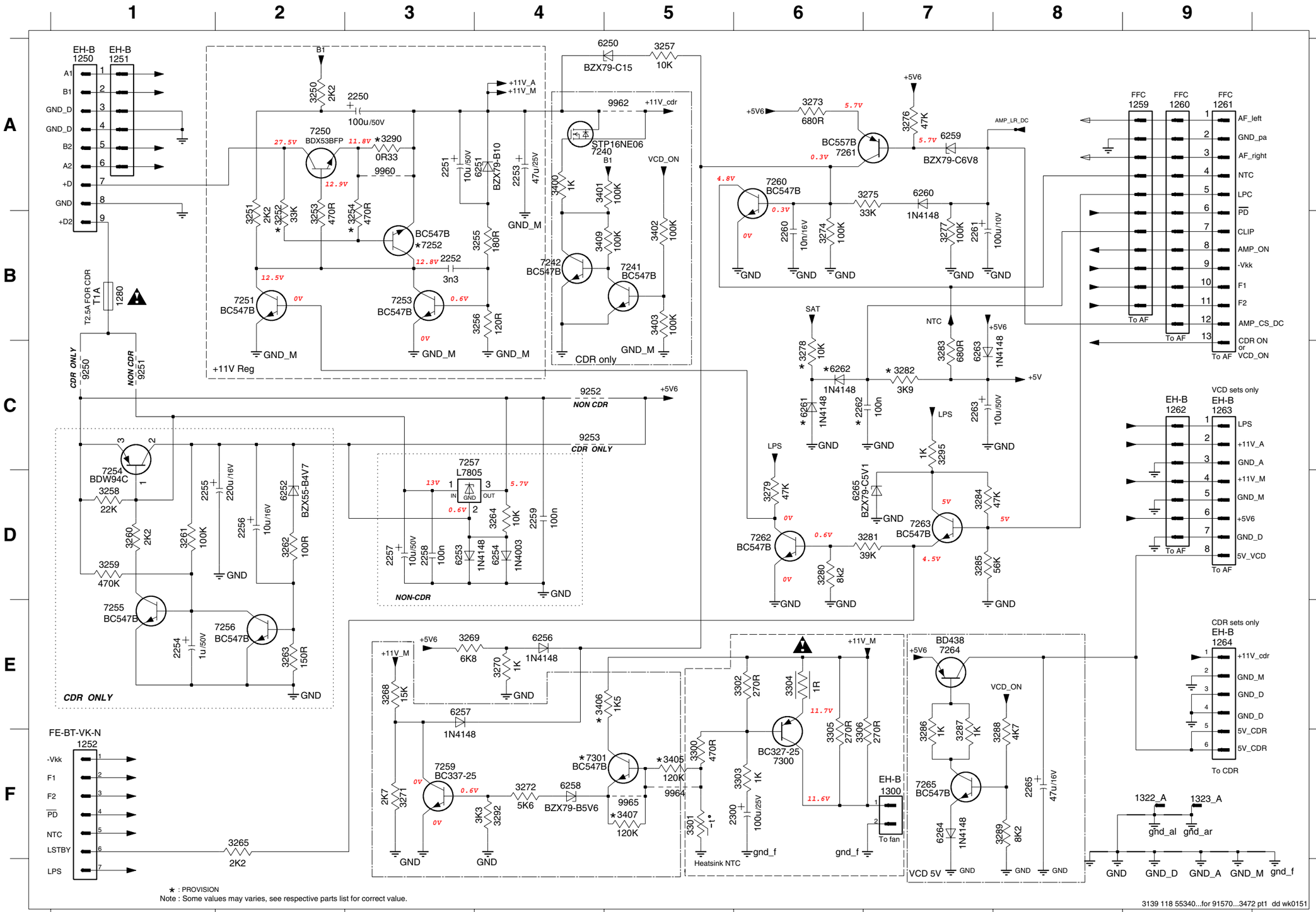


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3472 pt1 dd wk0151

9-5

LEFT/RIGHT AMPLIFIER & SUPPLY BOARD - CIRCUIT DIAGRAM (PART 1)



1250 A1
1251 A1
1252 F1
1259 A9
1260 A9
1261 A9
1262 C9
1263 C9
1264 E9
1280 B1
1300 F7
1322_A F9
1323_A F9
2250 A3
2251 A3
2252 B3
2253 A4
2254 E1
2255 D1
2256 D2
2257 D3
2258 D3
2259 D4
2260 B6
2261 B7
2262 C6
2263 C7
2265 F8
2300 F6
3250 A2
3251 B2
3252 B2
3253 B2
3254 B3
3255 B3
3256 B3
3257 A5
3258 D1
3259 D1
3260 D1
3261 D1
3262 D2
3263 E2
3264 D4
3265 F2
3268 E3
3269 E3
3270 E4
3271 F3
3272 F4
3273 A6
3274 B6
3275 A7
3276 A7
3277 B7
3278 C6
3279 D6
3280 D6
3281 D7
3282 C7
3283 C7
3284 D7
3285 D7
3286 F7
3287 F7
3288 F8
3289 F8
3290 A3
3292 F4
3295 C7
3300 F5
3301 F5
3302 E6
3303 F6
3304 E6
3305 F6
3306 F6
3400 A4
3401 A4
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3405 F5
3406 E4
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3409 B4
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6251 A3
6252 D2
6253 D3
6254 D4
6256 E4
6257 E3
6258 F4
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6261 C6
6262 C6
6263 C7
6264 F7
6265 D6
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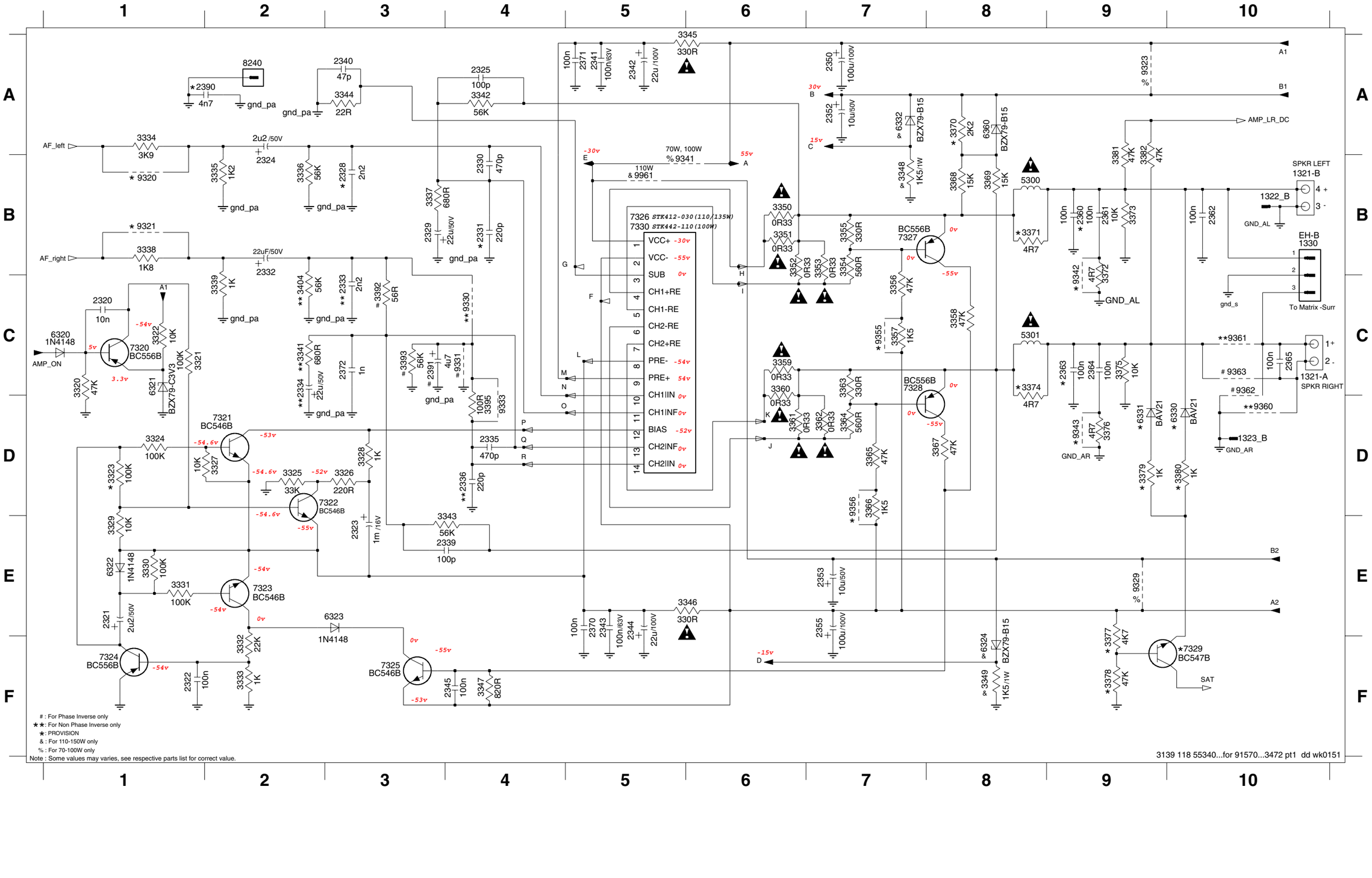
7252 B3
7253 B3
7254 C1
7255 E1
7256 E1
7257 C3
7259 F3
7260 A6
7261 A6
7262 D6
7263 D7
7264 E7
7265 F7
7300 F6
7301 F4
9250 C1
9251 C1
9252 C4
9253 C4
9960 A3
9962 A5
9964 F5
9965 F5

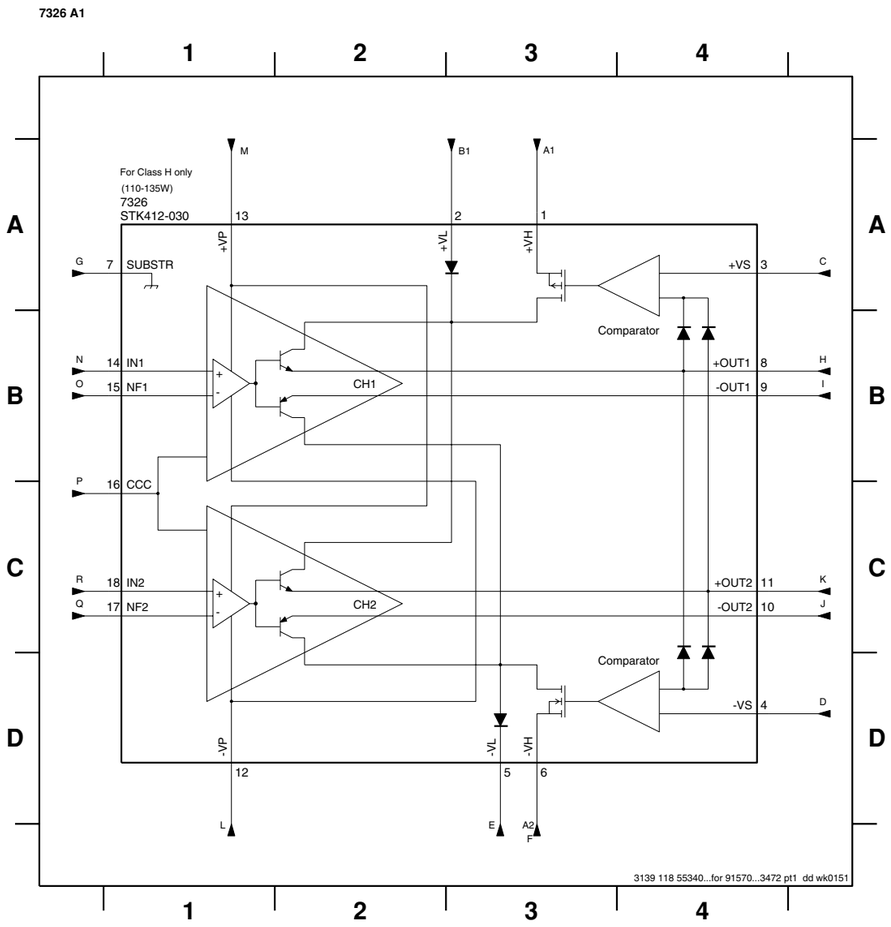
9-6

LEFT/RIGHT AMPLIFIER & SUPPLY BOARD - CIRCUIT DIAGRAM (PART 2)

1321-A C10	2322 F1	2331 B4	2340 A3	2352 A7	2364 C9	3320 C1	3327 D2	3334 A1	3342 A4	3349 F8	3356 C7	3363 C7	3370 A8	3377 F9	3393 C3	6322 E1	7320 C1	7328 C7	9329 E9	9355 C7
1321-B B10	2323 E3	2332 B2	2341 A5	2353 E7	2365 C10	3321 C1	3328 D3	3335 B2	3343 E4	3350 B6	3357 C7	3364 D7	3371 B8	3378 F9	3395 D4	6323 E3	7321 D2	7329 F10	9330 C4	9356 D7
1322_B B10	2324 B2	2333 C3	2342 A5	2355 E7	2370 E5	3322 C1	3329 E1	3336 B2	3344 A3	3351 B6	3358 C8	3365 D7	3372 B9	3379 D9	3404 C2	6324 F8	7322 D2	7330 B5	9331 C4	9360 D10
1323_B D10	2325 A4	2334 C2	2343 D4	2360 B9	2371 A5	3323 D1	3330 E1	3337 B3	3345 A6	3352 B6	3359 C6	3366 D7	3373 B9	3380 D10	5300 B8	6330 D10	7323 E1	8240 A2	9333 D4	9361 C10
1330 B10	2328 B3	2335 D4	2344 E5	2361 B9	2372 C3	3324 D1	3331 E1	3338 B1	3346 E6	3353 B7	3360 C6	3367 D8	3374 C8	3381 B9	5301 C8	6331 D9	7324 F1	9320 B1	9341 B5	9362 C10
2320 C1	2329 B3	2336 D4	2345 F4	2362 B10	2390 A2	3325 D2	3332 F2	3339 C2	3347 B7	3354 B7	3361 D6	3368 B8	3375 C9	3382 B9	6320 C1	6332 A7	7325 F3	9321 B1	9342 B9	9363 C10
2321 E1	2330 B4	2339 E4	2350 A7	2363 C9	2391 C3	3326 D3	3333 F2	3341 C2	3348 B7	3355 B7	3362 D7	3369 B8	3376 D9	3392 C3	6321 C1	6360 A8	7327 B7	9323 A9	9343 D9	9961 B5



LEFT/RIGHT AMPLIFIER & SUPPLY BOARD - CIRCUIT DIAGRAM (PART 3)



MECHANICAL PARTS LIST

0002	4822 492 11735	SPRING TRANS

ELECTRICAL PARTS LIST - MAINS BOARD

MISCELLANEOUS

1901	4822 265 31015	⚠ Mains Socket	/21/22/30
1901	2422 030 00328	⚠ Mains Socket	/37
1902	2422 129 16478	⚠ Voltage Selector 2P 5A	/21
1903	4822 071 52001	⚠ Fuse RAD LT 200mA 250V	/21
1904	4822 071 52001	⚠ Fuse RAD LT 200mA 250V	/21
1905	2422 086 10963	⚠ Fuse RAD LT 5A 250V	/21/22/30
1905	4822 252 51123	⚠ Fuse RAD LT 6,3A 250V	/37
1914	4822 267 10953	Flex Connector 7P	
1921	4822 071 55002	⚠ Fuse RAD LT 5A 250V	
1922	4822 071 55002	⚠ Fuse RAD LT 5A 250V	
1923	4822 071 55002	⚠ Fuse RAD LT 5A 250V	
1924	4822 071 55002	⚠ Fuse RAD LT 5A 250V	
1925	4822 071 52502	⚠ Fuse RAD LT 2,5A 250V	
1926	4822 071 51602	⚠ Fuse RAD LT 1,6A 250V	

CAPACITORS

2901	4822 121 43526	47nF 5% 250V	
2902	4822 121 43526	47nF 5% 250V	
2903	4822 124 40207	100uF 20% 25V	/21
2904	4822 124 40255	100uF 20% 63V	
2912	4822 124 22652	2,2uF 20% 50V	/21
2912	4822 124 21913	1uF 20% 63V	/22/30/37
2921	2022 318 00109	100nF 10% 250V	
2922	2022 318 00109	100nF 10% 250V	
2923	2022 318 00109	100nF 10% 250V	
2924	4822 121 43526	47nF 5% 250V	
2925	4822 121 43526	47nF 5% 250V	
2926	4822 121 43526	47nF 5% 250V	
2927	2020 024 90733	4700uF 20% 80V	
2928	2020 024 90733	4700uF 20% 80V	
2930	2022 020 00644	3300uF 20% 50V	
2932	2022 020 00644	3300uF 20% 50V	
2941	5322 121 42386	100nF 5% 63V	
2942	5322 121 42386	100nF 5% 63V	
2944	4822 124 42367	3300uF 20% 35V	
2945	9965 000 12531	6800uF 25V 20%	
2948	4822 123 14025	2200uF 20% 16V	

9-7

ELECTRICAL PARTS LIST - MAINS BOARD

RESISTORS

3901	4822 053 21106	⚠ 10M 5% 0,5W	/37
3902	4822 053 10471	470R 5% 1W	/22/30
3902	4822 053 10121	120R 5% 1W	/37
3903	4822 050 11002	1k 1% 0,4W	
3904	4822 050 11002	1k 1% 0,4W	
3905	4822 116 52283	4k7 5% 0,5W	/21
3905	4822 116 52244	15k 5% 0,5W	/22/30/37
3906	4822 116 52256	2k2 5% 0,5W	/21
3907	4822 050 21003	10k 1% 0,6W	/21
3912	4822 116 52234	100k 5% 0,5W	
3913	4822 050 21003	10k 1% 0,6W	
3914	4822 116 52176	10R 5% 0,5W	
3922	4822 050 23303	33k 1% 0,6W	
3923	4822 050 23303	33k 1% 0,6W	
3941	4822 117 11342	⚠ 0R33 5% 2W	
3942	4822 117 11342	⚠ 0R33 5% 2W	
3951	4822 052 10479	⚠ 47R 5% 0,33W	
3952	4822 116 83961	6k8 5%	
3953	4822 116 83961	6k8 5%	
3954	4822 116 83881	390R 5% 0,5W	
3955	4822 050 11002	1k 1% 0,4W	/21/37
3955	4822 116 52263	2k7 5% 0,5W	/22/30

COILS & FILTERS

5900	4822 157 11832	⚠ 400uH 3A	/22/30
5901	4822 157 11628	⚠ Mains Choke	/21
5903	3103 308 30600	⚠ Transformer Standby	/21
5903	3103 308 30610	⚠ Transformer Standby	/22/30
5903	3103 308 30800	⚠ Transformer Standby	/37
5905	4822 280 10382	⚠ Relay 1P 9V 10/80A SDT-SS	

DIODES

6900	4822 130 31878	1N4003G	/22/30/37
6901	4822 130 32245	BYV10-40	/21
6901	4822 130 31878	1N4003G	/22/30/37
6902	4822 130 32245	BYV10-40	/21
6902	4822 130 31878	1N4003G	/22/30/37
6903	4822 130 32245	BYV10-40	/21
6903	4822 130 31878	1N4003G	/22/30/37
6904	4822 130 32245	BYV10-40	/21
6904	4822 130 31878	1N4003G	/22/30/37
6905	4822 130 30621	1N4148	
6906	4822 130 30621	1N4148	
6907	4822 130 34382	BZX79-C8V2	/21
6908	4822 130 32245	BYV10-40	/21
6909	4822 130 31878	1N4003G	/21
6910	4822 130 30621	1N4148	
6911	4822 130 30621	1N4148	
6915	4822 130 30621	1N4148	
6916	4822 130 34382	BZX79-C8V2	
6917	4822 130 30621	1N4148	
6918	4822 130 30621	1N4148	
6921	4822 130 10944	⚠ GBU6D	
6922	4822 130 10944	⚠ GBU6D	
6923	4822 130 31878	1N4003G	
6923	5322 130 80686	1N5392	
6924	4822 130 31878	1N4003G	
6924	5322 130 80686	1N5392	
6925	4822 130 31878	1N4003G	
6925	5322 130 80686	1N5392	
6926	4822 130 31878	1N4003G	
6926	5322 130 80686	1N5392	
6927	4822 130 31878	1N4003G	
6927	5322 130 80686	1N5392	
6928	4822 130 31878	1N4003G	
6928	5322 130 80686	1N5392	
6930	4822 130 34233	BZX79-C5V1	
6955	4822 130 34142	BZX79-C33	
6956	4822 130 31878	1N4003G	

TRANSISTORS & INTEGRATED CIRCUITS

7901	4822 130 41246	BC327-25	/21
7902	4822 130 40959	BC547B	/21
7911	4822 130 40959	BC547B	
7912	4822 130 40959	BC547B	
7951	4822 130 41327	BC327-40	
7952	4822 130 41327	BC327-40	

Note : Only the parts mentioned in this list are normal service spare parts.

MISCELLANEOUS

0028	3139 114 73910	Holder STK PWR2002 150W	
1252	4822 267 10953	Flex Connector 7P	
1259	4822 267 11039	Flex Connector 11P	
1280	4822 071 51002 ⚠	Fuse RAD LT 1A 250V	
1321	4822 267 31176	L/R Speaker Terminal	

CAPACITORS

2250	4822 124 40255	100uF 20% 63V	
2251	4822 124 40248	10uF 20% 63V	
2252	4822 122 10577	3,3nF 10% 16V	
2253	4822 124 40433	47uF 20% 25V	
2257	4822 124 40248	10uF 20% 63V	
2258	5322 121 42386	100nF 5% 63V	
2259	5322 121 42386	100nF 5% 63V	
2260	4822 121 51387	10nF 20% 16V	
2261	4822 124 41584	100uF 20% 10V	
2263	4822 124 40248	10uF 20% 63V	
2300	4822 124 40207	100uF 20% 25V	
2320	4822 121 43693	10nF 100V	
2321	4822 124 22652	2,2uF 20% 50V	
2322	5322 121 42386	100nF 5% 63V	
2323	4822 124 81144	1000uF 16V	
2324	4822 124 22652	2,2uF 20% 50V	
2325	4822 122 33195	100pF 10% 50V	
2329	4822 124 81151	22uF 50V	
2330	4822 122 33519	470pF 10% 50V	
2332	4822 124 81151	22uF 50V	
2335	4822 122 33519	470pF 10% 50V	
2339	4822 122 33195	100pF 10% 50V	
2340	4822 126 12726	47pF 5% 50V	
2341	5322 121 42386	100nF 5% 63V	
2342	4822 124 40764	22uF 100 V	
2343	5322 121 42386	100nF 5% 63V	
2344	4822 124 40764	22uF 100 V	
2345	2020 561 90365	100nF +80/-20% 50V	
2350	2020 012 93547	100uF 20% 63V	
2352	4822 124 40248	10uF 20% 63V	
2353	4822 124 40248	10uF 20% 63V	
2355	2020 012 93547	100uF 20% 63V	
2361	5322 121 42386	100nF 5% 63V	
2362	4822 121 43856	4,7nF 5% 250V	
2364	5322 121 42386	100nF 5% 63V	
2365	4822 121 43856	4,7nF 5% 250V	
2370	2020 561 90365	100nF +80/-20% 50V	
2371	2020 561 90365	100nF +80/-20% 50V	
2372	4822 122 33197	1nF 10% 50V	
2391	4822 124 40769	4,7uF 20% 100V	

RESISTORS

3250	4822 116 52256	2k2 5% 0,5W	
3251	4822 116 52256	2k2 5% 0,5W	
3253	4822 116 83883	470R 5% 0,5W	
3255	4822 116 52213	180R 5% 0,5W	
3256	4822 116 52206	120R 5% 0,5W	
3257	4822 050 21003	10k 1% 0,6W	
3264	4822 050 21003	10k 1% 0,6W	
3265	4822 050 11002	1k 1% 0,4W	
3268	4822 116 52244	15k 5% 0,5W	
3269	4822 116 83961	6k8 5%	
3270	4822 050 11002	1k 1% 0,4W	
3271	4822 116 52263	2k7 5% 0,5W	
3272	4822 116 52289	5k6 5% 0,5W	
3273	4822 116 52228	680R 5% 0,5W	
3274	4822 116 52234	100k 5% 0,5W	
3275	4822 050 23303	33k 1% 0,6W	
3276	4822 116 83884	47k 5% 0,5W	
3277	4822 116 52234	100k 5% 0,5W	
3279	4822 116 83884	47k 5% 0,5W	
3280	4822 116 52303	8k2 5% 0,5W	
3281	4822 116 83882	39k 5% 0,5W	
3283	4822 116 52228	680R 5% 0,5W	
3284	4822 116 83884	47k 5% 0,5W	
3285	4822 116 52291	56k 5% 0,5W	
3292	4822 116 52269	3k3 5% 0,5W	
3295	4822 050 11002	1k 1% 0,4W	/21/37
3295	4822 116 52263	2k7 5% 0,5W	/22/30
3300	4822 116 83883	470R 5% 0,5W	
3301	4822 117 12063	NTC DC 5W 10k 5%	
3302	4822 116 83876	270R 5% 0,5W	
3303	4822 050 11002	1k 1% 0,4W	
3304	4822 052 10108 ⚠	1R 5% 0,33W	
3305	4822 116 83876	270R 5% 0,5W	
3306	4822 116 83876	270R 5% 0,5W	
3320	4822 116 83884	47k 5% 0,5W	
3321	4822 116 52234	100k 5% 0,5W	
3322	4822 050 21003	10k 1% 0,6W	
3324	4822 116 52234	100k 5% 0,5W	
3325	4822 050 23303	33k 1% 0,6W	
3326	4822 116 83872	220R 5% 0,5W	
3327	4822 050 21003	10k 1% 0,6W	
3328	4822 050 11002	1k 1% 0,4W	
3329	4822 050 21003	10k 1% 0,6W	
3330	4822 116 52234	100k 5% 0,5W	
3331	4822 116 52234	100k 5% 0,5W	
3332	4822 116 52257	22k 5% 0,5W	
3333	4822 050 11002	1k 1% 0,4W	
3334	4822 116 52276	3k9 5% 0,5W	
3335	4822 116 52207	1k2 5% 0,5W	
3336	4822 116 52291	56k 5% 0,5W	
3337	4822 116 52228	680R 5% 0,5W	
3338	4822 116 52249	1k8 5% 0,5W	
3339	4822 050 11002	1k 1% 0,4W	
3342	4822 116 52291	56k 5% 0,5W	
3343	4822 116 52291	56k 5% 0,5W	

9-8

ELECTRICAL PARTS LIST - LEFT/RIGHT AMPLIFIER & SUPPLY BOARD

3344	4822 116 52186	22R 5% 0,5W	
3345	4822 052 10221 ⚠	220R 5% 0,33W	/21/22/30
3345	4822 052 10331 ⚠	330R 5% 0,33W	/37
3346	4822 052 10221 ⚠	220R 5% 0,33W	/21/22/30
3346	4822 052 10331 ⚠	330R 5% 0,33W	/37
3347	4822 116 52228	680R 5% 0,5W	
3348	4822 053 10152	1k5 5% 1W	
3349	4822 053 10152	1k5 5% 1W	
3350	2322 194 96001 ⚠	RST MFLM PR02 A 0R33 PM5	
3351	2322 194 96001 ⚠	RST MFLM PR02 A 0R33 PM5	
3352	2322 194 96001 ⚠	RST MFLM PR02 A 0R33 PM5	
3353	2322 194 96001 ⚠	RST MFLM PR02 A 0R33 PM5	
3354	4822 116 52226	560R 5% 0,5W	
3355	4822 116 52219	330R 5% 0,5W	
3356	4822 116 83884	47k 5% 0,5W	
3357	4822 116 52243	1k5 5% 0,5W	
3358	4822 116 83884	47k 5% 0,5W	
3359	2322 194 96001 ⚠	RST MFLM PR02 A 0R33 PM5	
3360	2322 194 96001 ⚠	RST MFLM PR02 A 0R33 PM5	
3361	2322 194 96001 ⚠	RST MFLM PR02 A 0R33 PM5	
3362	2322 194 96001 ⚠	RST MFLM PR02 A 0R33 PM5	
3363	4822 116 52219	330R 5% 0,5W	
3364	4822 116 52226	560R 5% 0,5W	
3365	4822 116 83884	47k 5% 0,5W	
3366	4822 116 52243	1k5 5% 0,5W	
3367	4822 116 83884	47k 5% 0,5W	
3368	4822 116 52244	15k 5% 0,5W	
3369	4822 116 52244	15k 5% 0,5W	
3372	4822 053 10478	4R7 5% 1W	
3373	4822 050 21003	10k 1% 0,6W	
3375	4822 050 21003	10k 1% 0,6W	
3376	4822 053 10478	4R7 5% 1W	
3381	4822 116 83884	47k 5% 0,5W	
3382	4822 116 83884	47k 5% 0,5W	
3392	4822 050 15609	56R 1% 0,4W	/21
3392	2122 101 02081	56R 5%	/22/30/37
3393	4822 116 52291	56k 5% 0,5W	
3395	4822 116 52175	100R 5% 0,5W	

COILS & FILTERS

5300	2422 536 00615 ⚠	Coil 11,5T 1.0-2UEW 8,0D B
5301	2422 536 00615 ⚠	Coil 11,5T 1.0-2UEW 8,0D B

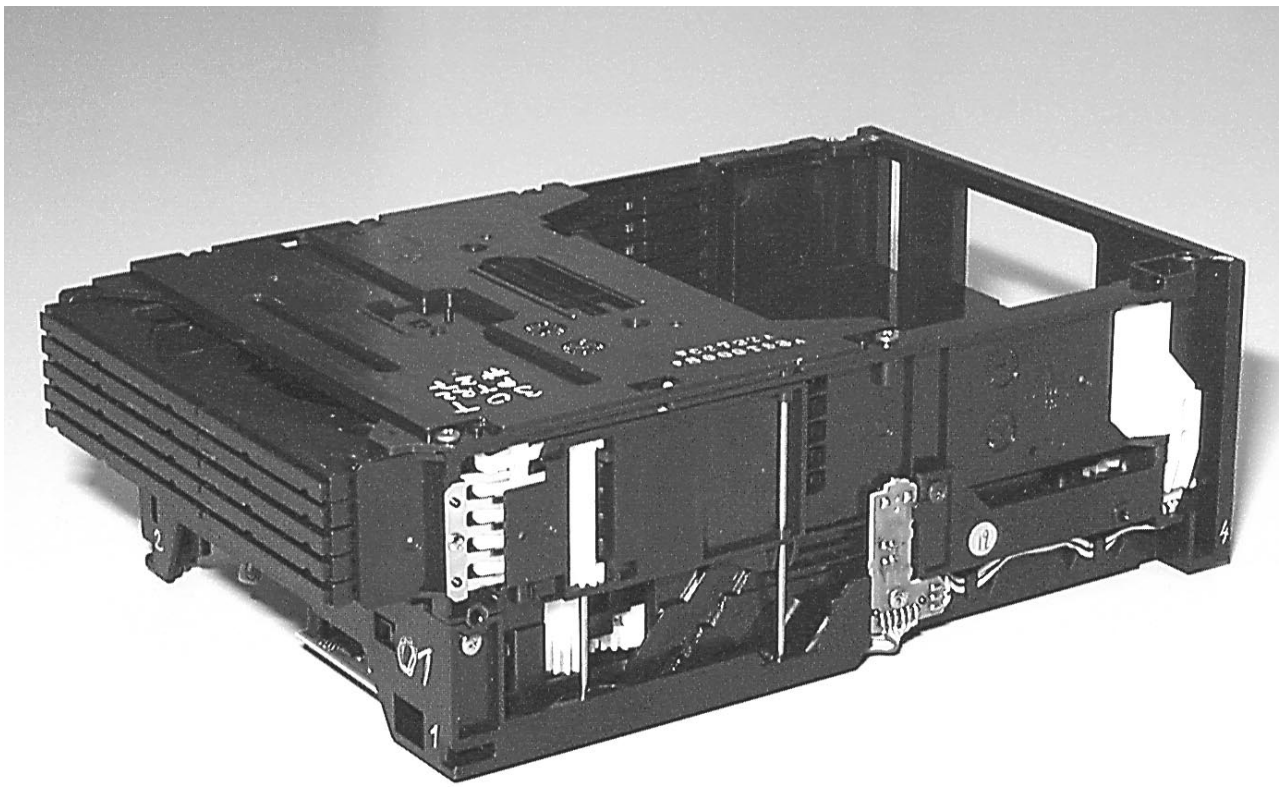
DIODES

6250	4822 130 34281	BZX79-C15
6251	4822 130 61219	BZX79-B10
6253	4822 130 30621	1N4148
6254	4822 130 31878	1N4003G
6256	4822 130 30621	1N4148
6257	4822 130 30621	1N4148
6258	4822 130 83206	BZX79-B5V6
6259	4822 130 34278	BZX79-C6V8
6260	4822 130 30621	1N4148
6263	4822 130 30621	1N4148
6265	4822 130 34233	BZX79-C5V1
6320	4822 130 30621	1N4148
6321	5322 130 31504	BZX79-C3V3
6322	4822 130 30621	1N4148
6323	4822 130 30621	1N4148
6324	4822 130 34281	BZX79-B15
6332	4822 130 34281	BZX79-B15
6360	4822 130 34281	BZX79-B15

TRANSISTORS & INTEGRATED CIRCUITS

7250	9322 139 23687	BDX53BFP
7251	4822 130 40959	BC547B
7253	4822 130 40959	BC547B
7257	4822 209 31841	L7805CP
7259	4822 130 40981	BC337-25
7260	4822 130 40959	BC547B
7261	4822 130 44568	BC557B
7262	4822 130 40959	BC547B
7263	4822 130 40959	BC547B
7300	4822 130 41246	BC327-25
7320	4822 130 41691	BC556B
7321	4822 130 44461	BC546B
7322	4822 130 44461	BC546B
7323	4822 130 44461	BC546B
7324	4822 130 41691	BC556B
7325	4822 130 44461	BC546B
7326	9322 180 27682	STK412-030I
7327	4822 130 41691	BC556B
7328	4822 130 41691	BC556B

Note : Only the parts mentioned in this list are normal service spare parts.



5DTC Module

(MP3 version)

Layout stage .4

TABLE OF CONTENTS

Service hints 10-2
Location of Printed Circuit Boards 10-5
Wiring.....10-6
Emergency opening.....10-7
Location of switches.....10-8
Blockdiagram 10-9

CD BOARD
Circuit Diagram 10-10
Component Layout side A 10-11
Component Layout side B 10-12
CONTROL BOARD
Circuit Diagram 10-13
Component Layout 10-13
MP3 BOARD
Circuit Diagram 10-14
Component Layout 10-15

Exploded view loader 10-16
Partslist 10-17

Service Hints

In case of symptom „skipping tracks“ perform following actions:

1. VERIFY THE COMPLAINT

PLAYABILITY CHECK

Use CDDA SBC 444A: 4822 397 30245
TR 14 (600µ black dot) maximum at 01:15
TR 19 (fingerprint)
TR 10 (1000µ wedge)

Use CD-RW Printed Audio Disk 7104 099 96611
TR 3 (Fingerprint)
TR 8 (600µ black dot) maximum at 01:00

- playback of all these tracks without audible disturbance
- jump forward/backward within a reasonable time

2. CLEAN THE LENS

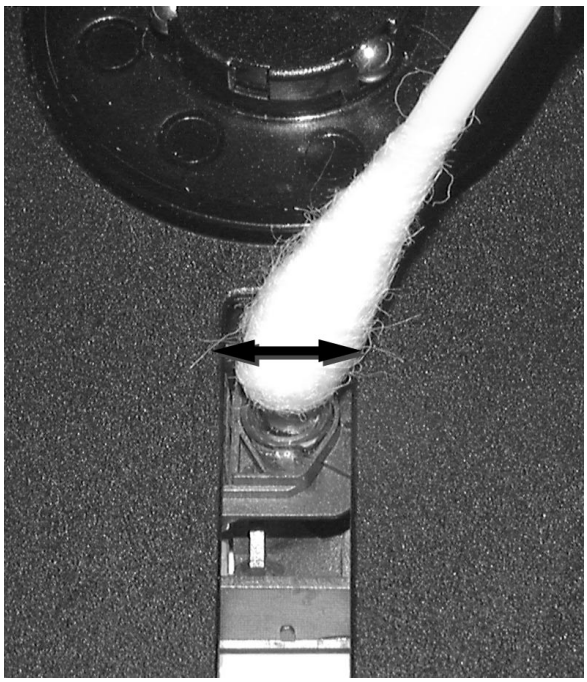
CD DRIVE – LENS CLEANING

Before touching the lens it is advised to clean the surface of the lens by blowing clean air over it in order to avoid that little particles make scratches on the lens.

Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use “KODAK LENS CLEANER CAT 176 71 36”, available in normal photo shops.

The actuator is a very precise mechanical component and may not be damaged in order to guarantee its full function. It is advised to clean the lens gently (don’t press too hard) with a soft and clean cotton bud moistened with the special lens cleaner.

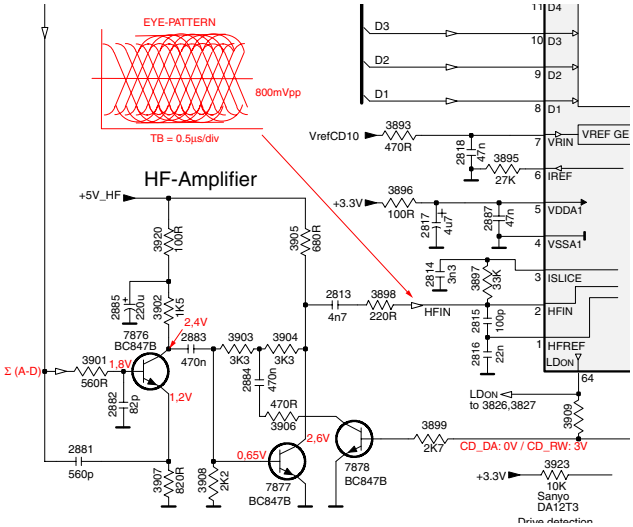
The direction of cleaning must be in the way as indicated in the picture below.



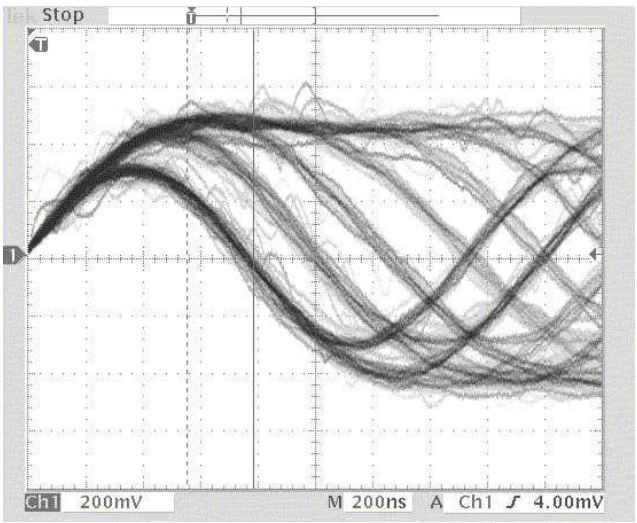
3. MEASURE THE EYE-PATTERN SIGNAL

EYE-PATTERN SIGNAL – JITTER MEASUREMENT

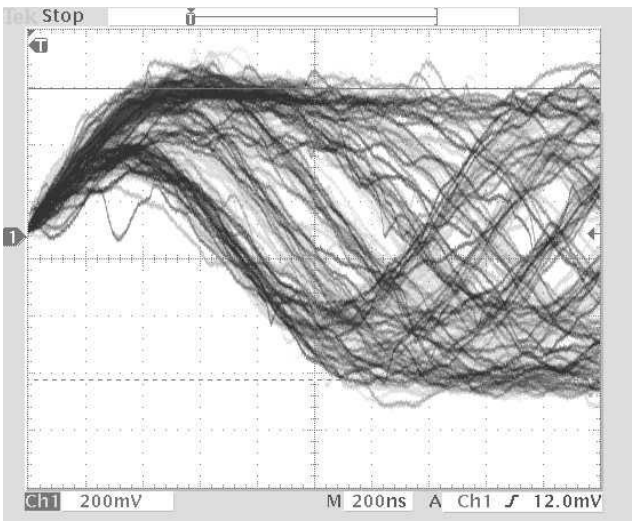
Measure the signal direct on resistor 3898 using an oscilloscope (see also chapter 10-9).



See below examples of the signal. Amplitude should read at least 700mVpp using SBC444A.



good



bad

If the oscilloscope shows a signal like the ‘bad’ one, and/or the amplitude decreases within 1minute - the CD drive has to be replaced.

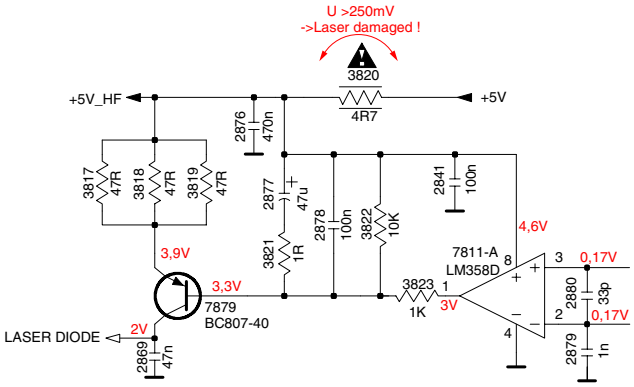
Service Hints

4. MEASURE THE LASER CURRENT

CD DRIVE – LASER CURRENT MEASUREMENT

The laser current can be measured as a voltage drop on resistor 3820. Typical value 170 - 190mV for CD-DA respectively 200 - 220mV for CD-RW.

Laser power control



5. MEASURE THE OFFSETS OF THE CD-DRIVE

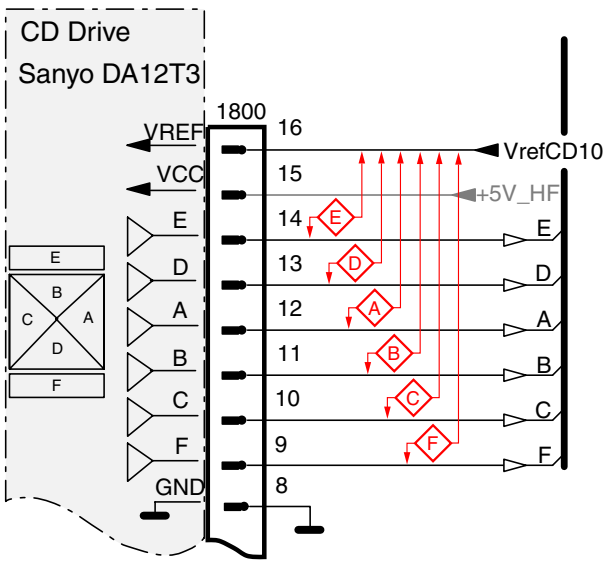
CD DRIVE – OFFSET MEASUREMENT

Each photodiode of the CD-drive may have an offset. This offset has to be compensated by the signal processor. A high offset of the CD-drive leads to poor playability of some CDs (skipping tracks).

Start the **Service Test Program** - section „Focus Test“ without a CD. Focus sensitivity = CD-RW.

Use a DC Millivoltmeter for measurement. The offsets can be measured direct on the connector. See drawing below.

The values from diode A-D should read 0±10mV. Diodes E and F are less critical.



If one of the offsets is higher than ±10mV the CD drive has to be replaced.

6. MEASURE THE OFFSETS OF THE CD10

SIGNAL PROCESSOR – OFFSET MEASUREMENT

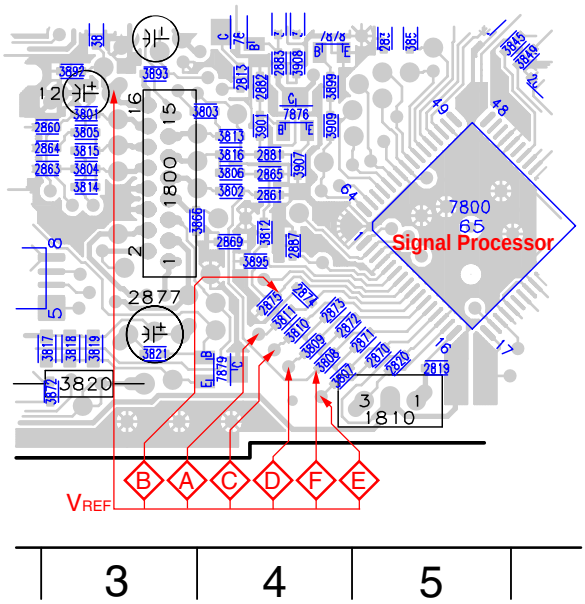
Each ADC input of the CD10 may have an offset too. Also this offset leads (together with the offsets of the CD Drive) to poor playability of some CDs (skipping tracks).

Start the **Service Test Program** - section „Focus Test“ using a CD-RW disc.

Use a DC Millivoltmeter for measurement. The offsets can be measured on capacitors near the signal processor. See drawing below.

The value should read 0mV±10mV.

CD Board side A view



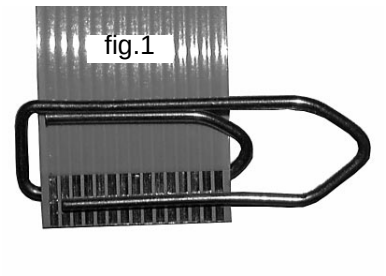
If one of the offsets is higher than ±10mV the signal processor has to be replaced.

If none of the measured offsets is higher than ±10mV - replace the part with the higher value.

WARNING

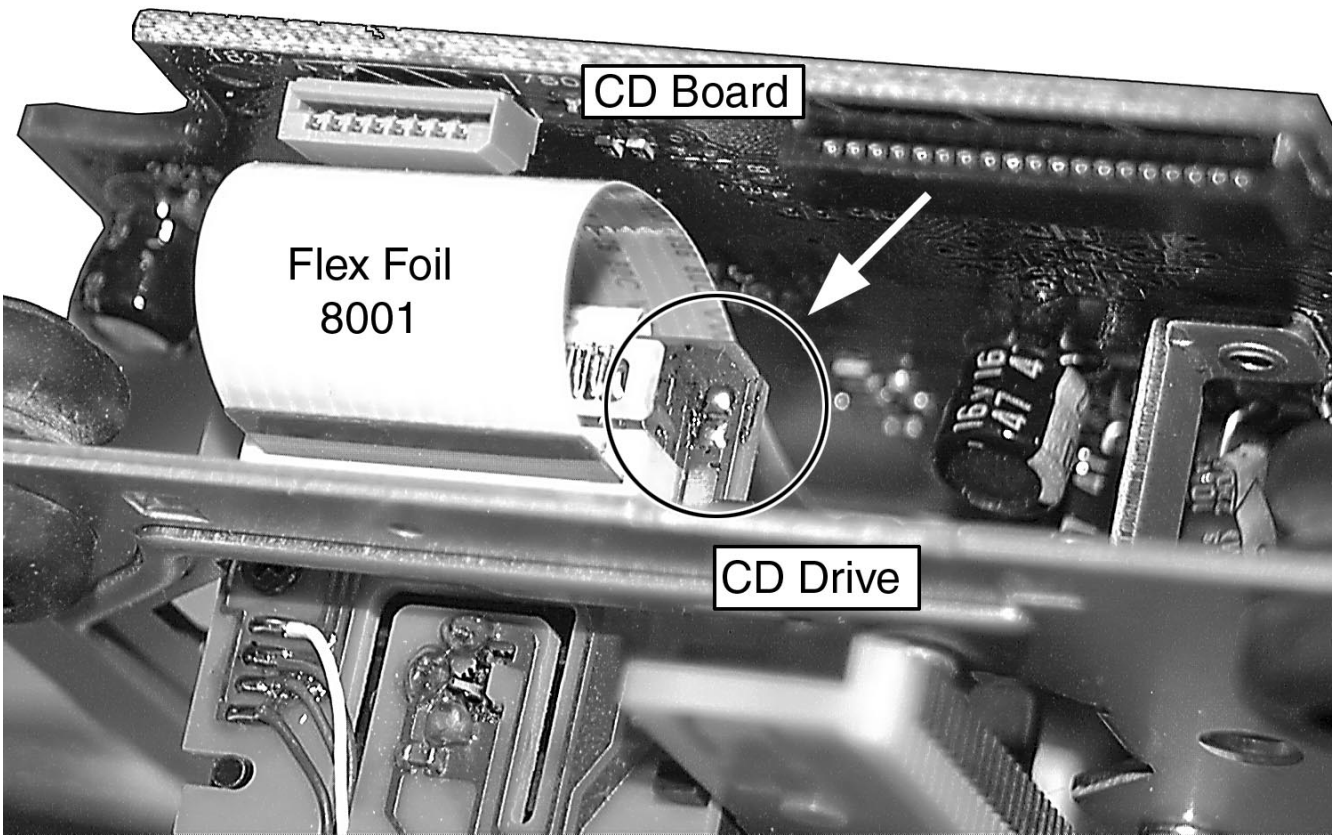
CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CDM MECHANISM. THAT´S WHY, BESIDES THE SAFETY MEASURES LIKE
• SWITCH OFF POWER SUPPLY
• ESD PROTECTION
ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

The CD drive forms a compact building block with the CD Board.

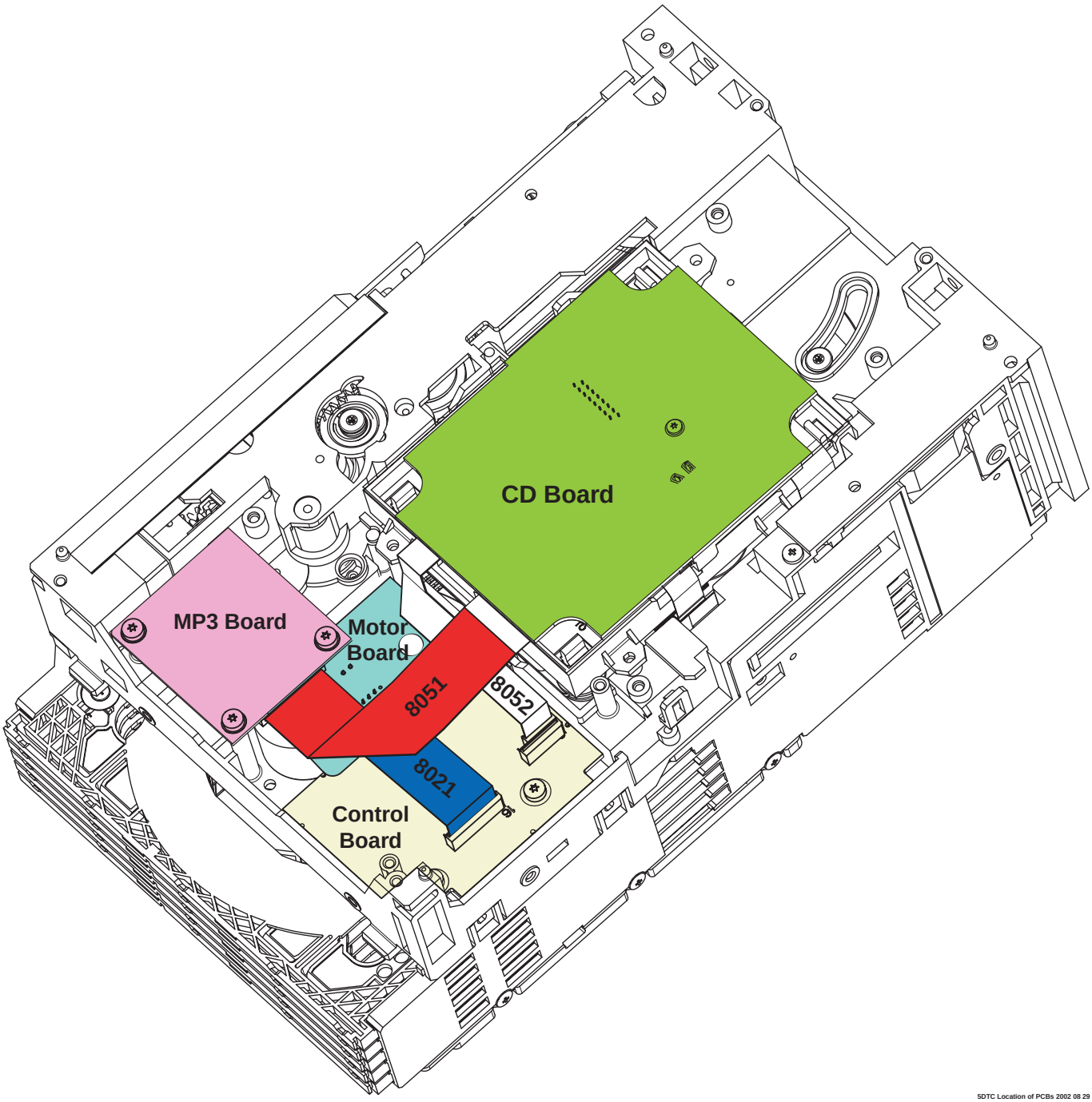


<u>The following steps have to be done when replacing the CD mechanism:</u>
1. Desolder disc and slide motor
2. Loosen 2x screw
1. Disconnect flexfoil from old CD drive
2. Put a paperclip over contacts of flexfoil to short-circuit the contacts (fig.1)
3. Remove old CD drive
4. Mount new CD drive to CD board
5. Solder disc and slide motor **after** fixing the drive to the board
5. Move slide outside
6. Remove paperclip from flexfoil
7. Connect flexfoil to new CD drive
8. Remove ESD-protection (solder joint) from laserunit (see picture below)

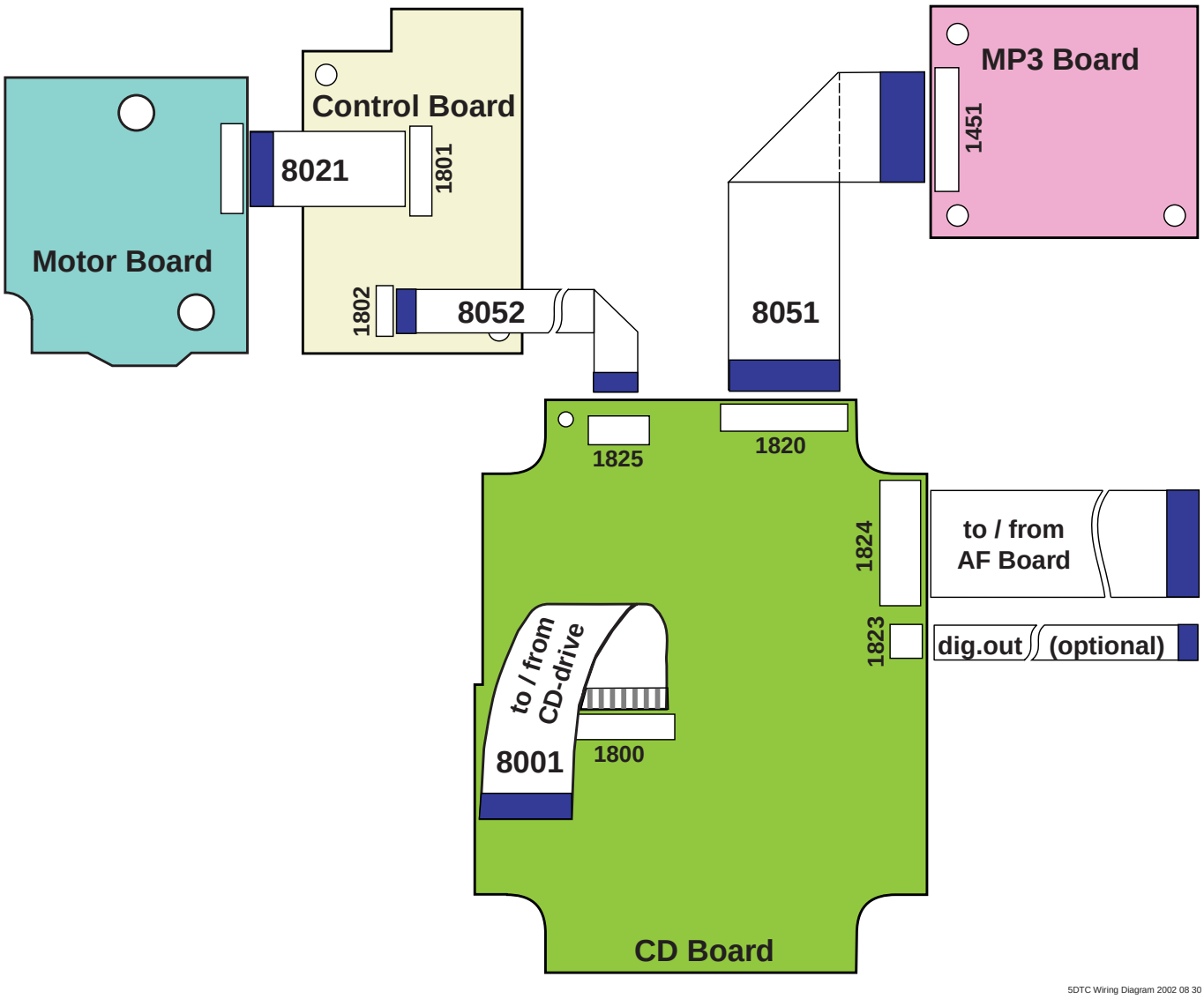
Attention: The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laserdiode to ground.
For proper functionality of the CD drive this solder joint must be removed **after** connection the drive to the set.



Location of Printed Circuit Boards



Wiring Diagram 5DTC Module

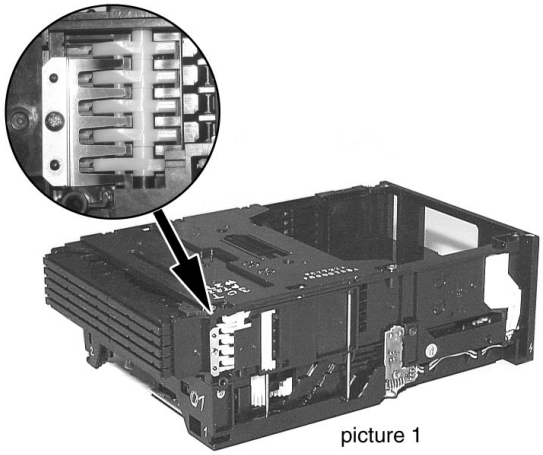


The FFC-Cables are available as sparepart.

8001	3103 308 93090	FFC CABLE 16Pin 80mm BD	Connection from CD Board to CD Drive
8051	3103 308 93100	FFC-CABLE 19Pin 90mm AD	Connection from CD Board to MP3 Board
8052	3103 308 93120	FFC CABLE 8Pin 80mm BD	Connection from CD Board to Control Board
8021	3103 308 93110	FFC-CABLE 16Pin 60mm AD	Connection from Control Board to Motor Board

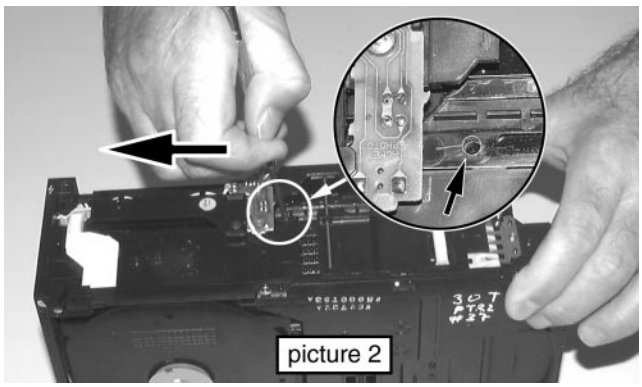
Emergency opening of the trays

The trays of the 5DTC are mechanically locked.

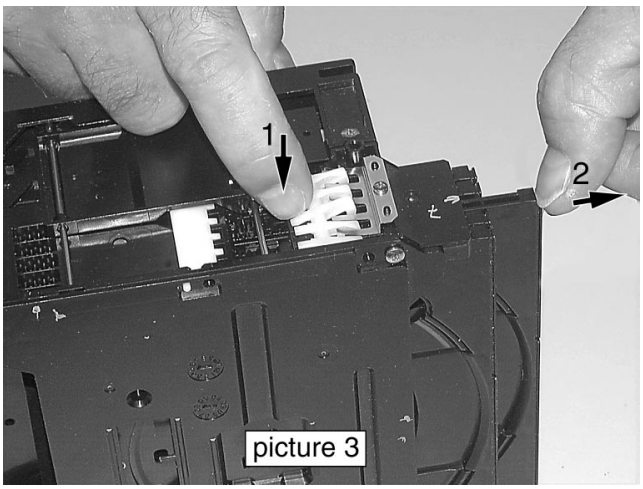


picture 1

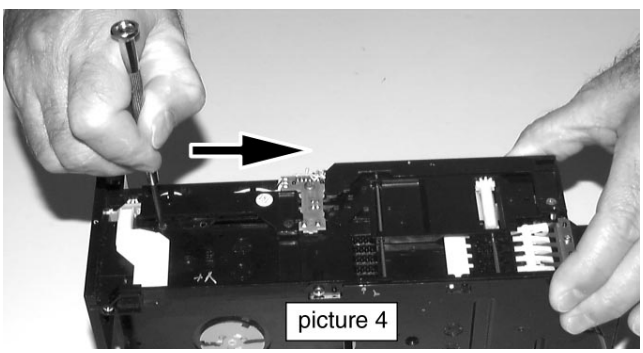
To open tray 1, 2 and 3 move lever (pos 29) backwards (e.g. with a screwdriver - see picture 2) to its endposition.



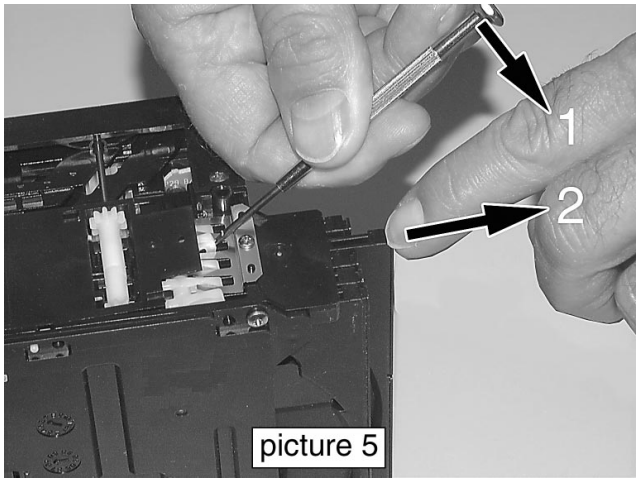
Release the locking mechanism and pull out the tray (see picture 3).



To open tray 4 and 5 move lever (pos 29) forward to its endposition (see picture 4).

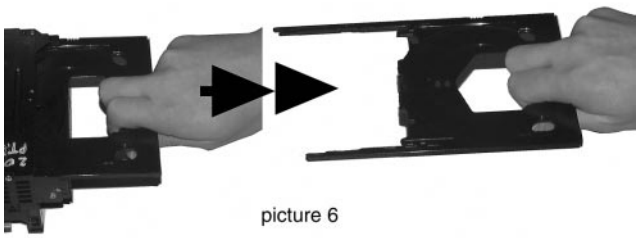


Release snap as shown in picture 5 and pull tray out.



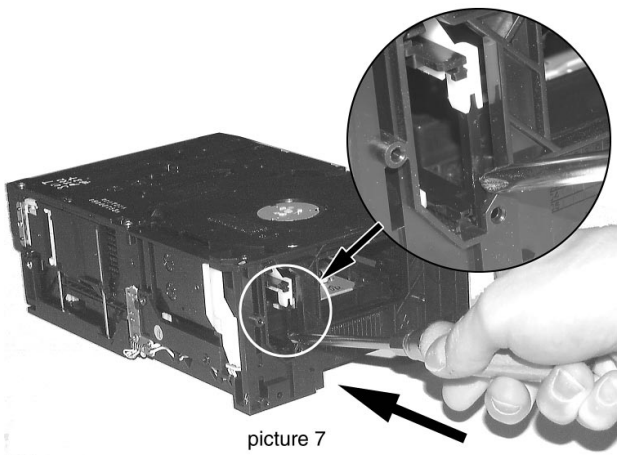
To remove a CD from Play Position perform following steps:

1. Open tray 1 as described before.
2. Tear the tray out with speed (see picture 6). The tray can be inserted aftewards without any alignment.



picture 6

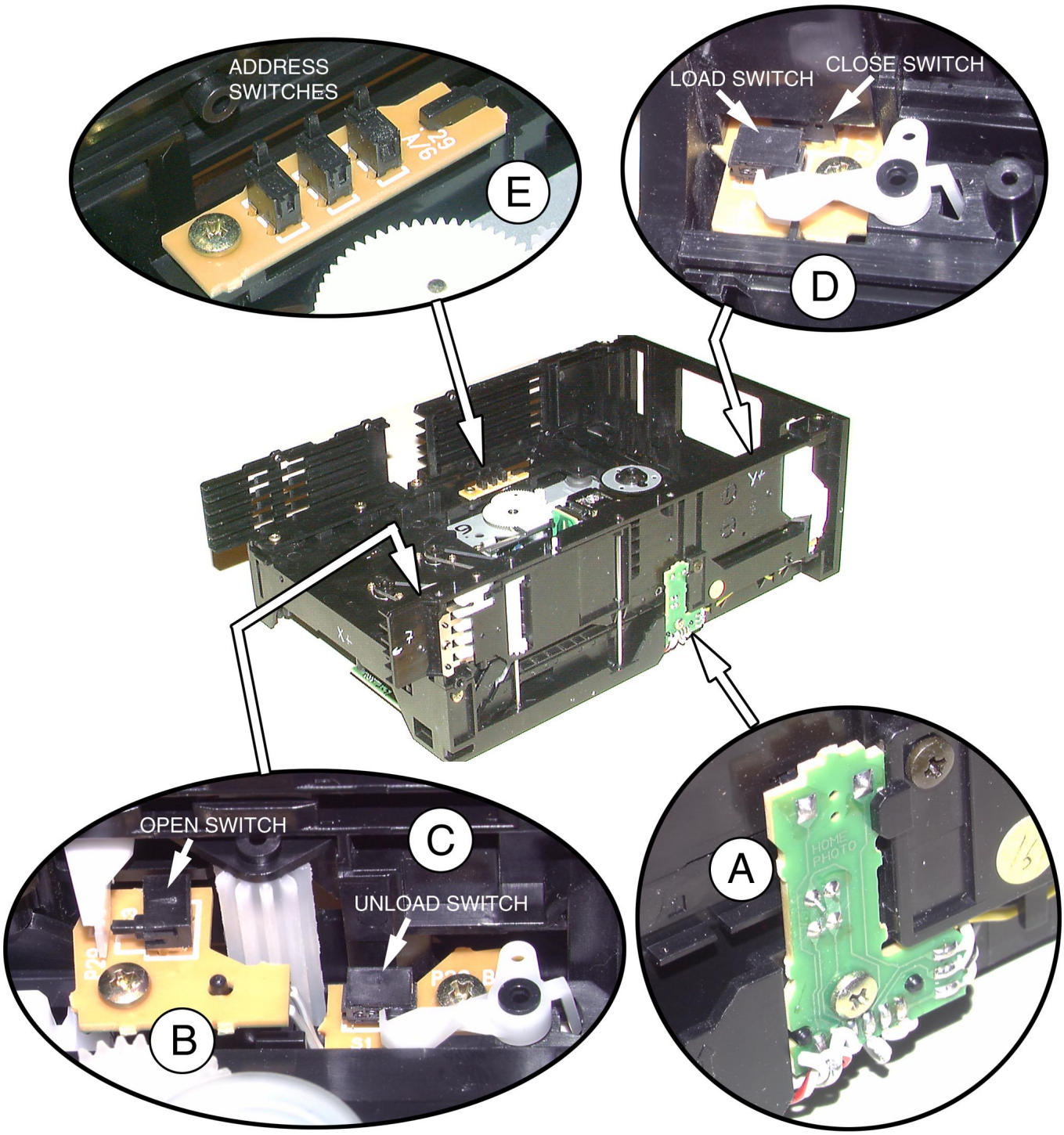
3. Move lever (pos 29) forward to its endposition (see picture 4).
4. Push lever (pos 31) forward (see picture 7).



picture 7

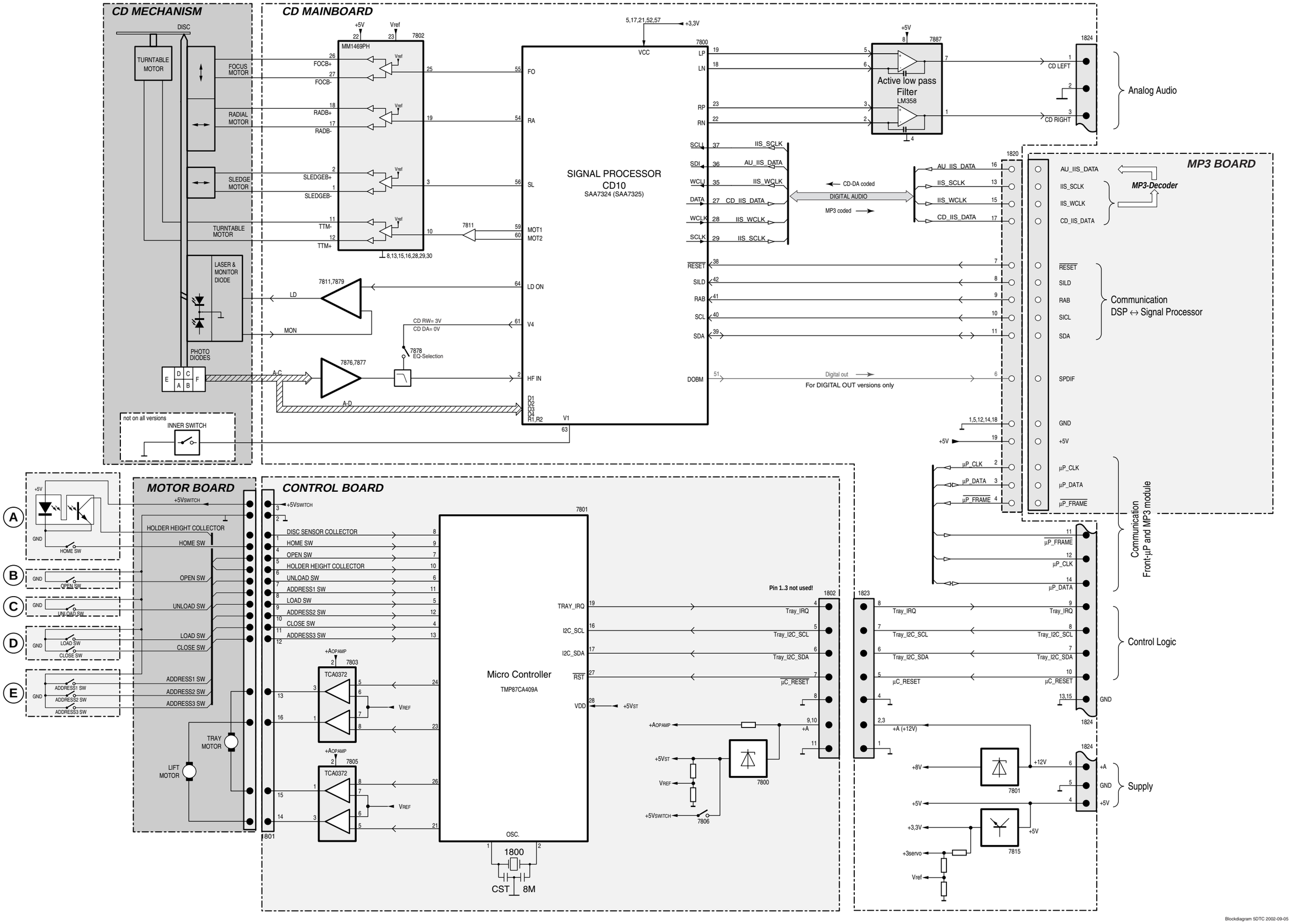
5. Remove CD.

Location of switches



10-9

BLOCK DIAGRAM 5DTC MP3 Version



10-10

5DTC CD BOARD

PHOTODIODES A..F

R2 (CD10) · R1 (CD10) · D4 (CD10) · D3 (CD10) · D2 (CD10) · D1 (CD10)

Laser power control

U >250mV
->Laser damaged !

CD Drive
Sanyo DA12T3

HF-Amplifier

EYE-PATTERN
800mVpp
TB = 0.5µs/div

Active Low Pass

LEFT CHANNEL · RIGHT CHANNEL

7810-B LM358DT · 7810-A LM358DT

Signal Processor

SAA7325
7800

BITSTREAM DAC · INTERFACE SER. DATA · INTERF. VERSAT. · INTERF. LOOPBACK SER. DATA · ADC · PROCESSING PRE- · FUNCTION CONTROL · PROCESSOR AUDIO · VREF GEN. · DEMOD EFM · PLL DIG. · SRAM ADDR · END FRONT · INTERFACE VERSATILE · CONTROL MOTOR · STAGES OUTPUT · CORR. ERROR · DET. PEAK · INTERF. EBU · SUBCODE PROCESSOR · MICROCONTROLLER INTERFACE

Digital MP3 Data · Digital Audio Data · Inner switch detection

For sets with DIGITAL OUT only

CD_DA: 0V / CD_RW: 3V

Mitsumi MCD2

Motor Driver

SLIDE · DISC · FOCUS · TRACK

accelerates disc · brakes disc

During speed up · During brake

ESD sensitive lines!

...V DC voltages measured in *PLAY MODE* with following conditions:
"+A" = 12V
"+5V" = 5V

EVM

to / from MP3 Board

to / from 5DTC Control Board

to / from Audio / Combi Board

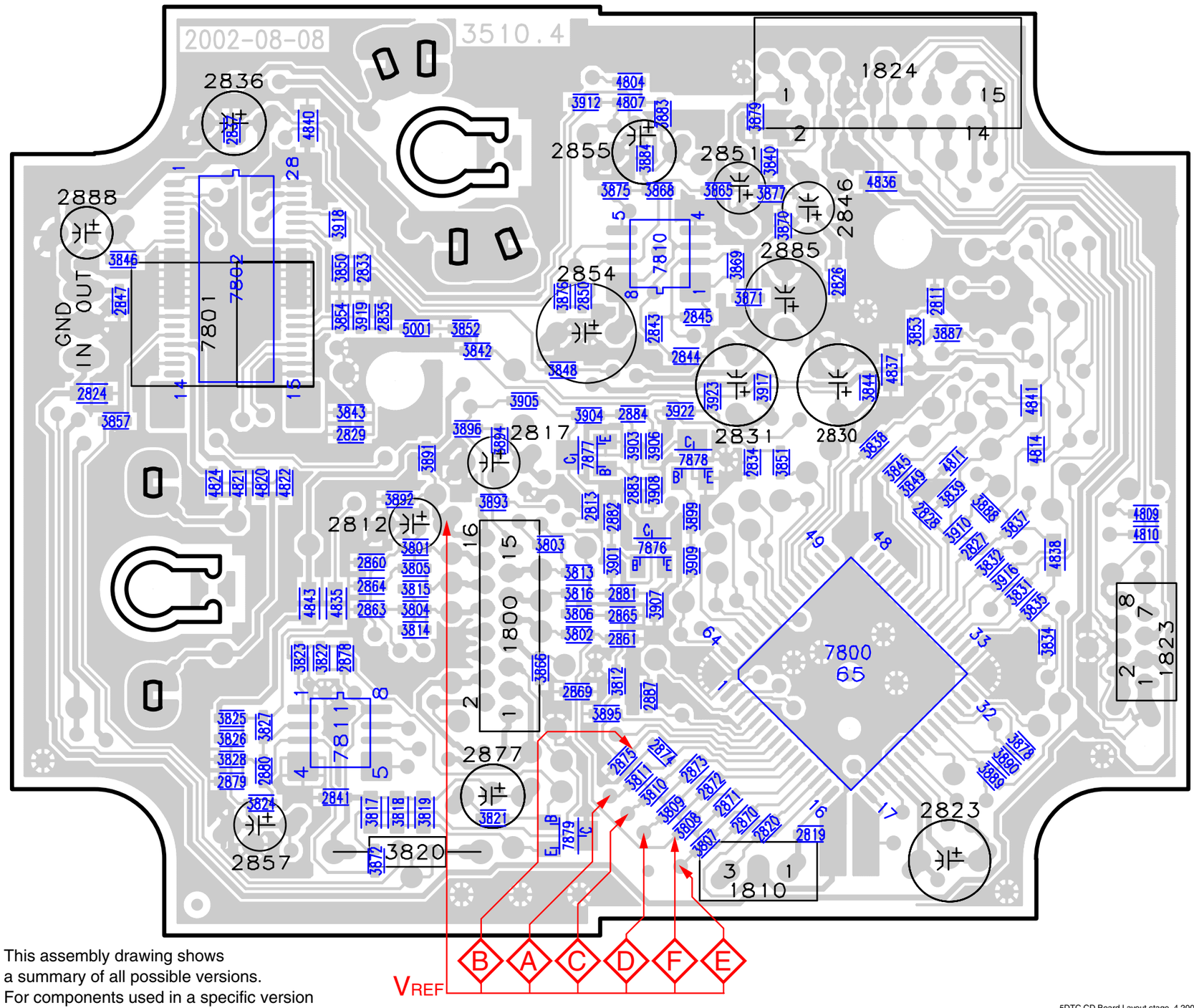
5DTC CD Board MP3 Version 2002 09 18

10-11

Mapping for Circuit Diagram

1800	E1	3827	F5
1810	D9	3828	G5
1820	B15	3829	C10
1823	F15	3831	D14
1824	H15	3832	E14
2187	F9	3833	C9
2812	J10	3834	D13
2813	G8	3835	D13
2814	G9	3836	I6
2815	G9	3837	E14
2816	G9	3838	G13
2817	F9	3839	E14
2818	F9	3840	B14
2819	C9	3841	I6
2820	C9	3842	J9
2821	C9	3843	J9
2822	C10	3844	J10
2823	C10	3845	F14
2824	I12	3846	J1
2825	C11	3847	H5
2826	A15	3848	H5
2827	E13	3849	F14
2828	E13	3850	H4
2829	J9	3851	H5
2830	J10	3852	H5
2831	H11	3854	H4
2832	H5	3855	J4
2833	H4	3856	I5
2834	H5	3859	I6
2836	G3	3860	I6
2837	G3	3861	J6
2838	I4	3862	I5
2839	I5	3864	B11
2840	J4	3865	A14
2841	F4	3866	F2
2843	B12	3867	B11
2844	B12	3868	B12
2845	B13	3869	B13
2846	B14	3870	B14
2847	I11	3871	B14
2848	A12	3872	G2
2849	A11	3873	A11
2850	A13	3874	A11
2851	A14	3875	A12
2852	I5	3876	A13
2853	H4	3877	A14
2853	J11	3878	C12
2854	A12	3879	A14
2855	B11	3880	I12
2860	A6	3881	J12
2861	A6	3883	A12
2863	B6	3884	B12
2864	C6	3888	D14
2865	C6	3889	C12
2866	B6	3890	C13
2869	F2	3891	J10
2870	A7	3892	J10
2871	A7	3893	F8
2872	B7	3895	F9
2873	B7	3896	F8
2874	C7	3897	G9
2875	C7	3898	G8
2876	E3	3899	H8
2877	F3	3901	G6
2878	F3	3902	G7
2879	F5	3903	G7
2880	F5	3904	G8
2881	H6	3905	F8
2882	G6	3906	H8
2884	G7	3907	H7
2885	G6	3908	H7
2886	G11	3909	H9
2893	G7	3910	E14
3801	A6	3911	H13
3802	A6	3912	A11
3803	B6	3917	H11
3804	B6	3918	H4
3805	C6	3919	H4
3806	C6	3920	F7
3807	A7	3922	H10
3808	A7	3923	H9
3809	B7	3925	A11
3810	B7	3926	A11
3811	C7	3927	B11
3812	C7	3928	B11
3813	D6	5001	H5
3814	D6	5002	H11
3815	E6	6877	J11
3816	D14	7800	D11
3816	E6	7801	I11
3817	F2	7802	G2
3818	F2	7810-A	B13
3819	F3	7810-B	A13
3820	E4	7811-A	F4
3821	F3	7811-B	I4
3822	F4	7875	I11
3823	F4	7876	G7
3824	F5	7877	H8
3825	F5	7878	H8
3826	F5	7879	F3

5DTC CD Board Side A



This assembly drawing shows
a summary of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

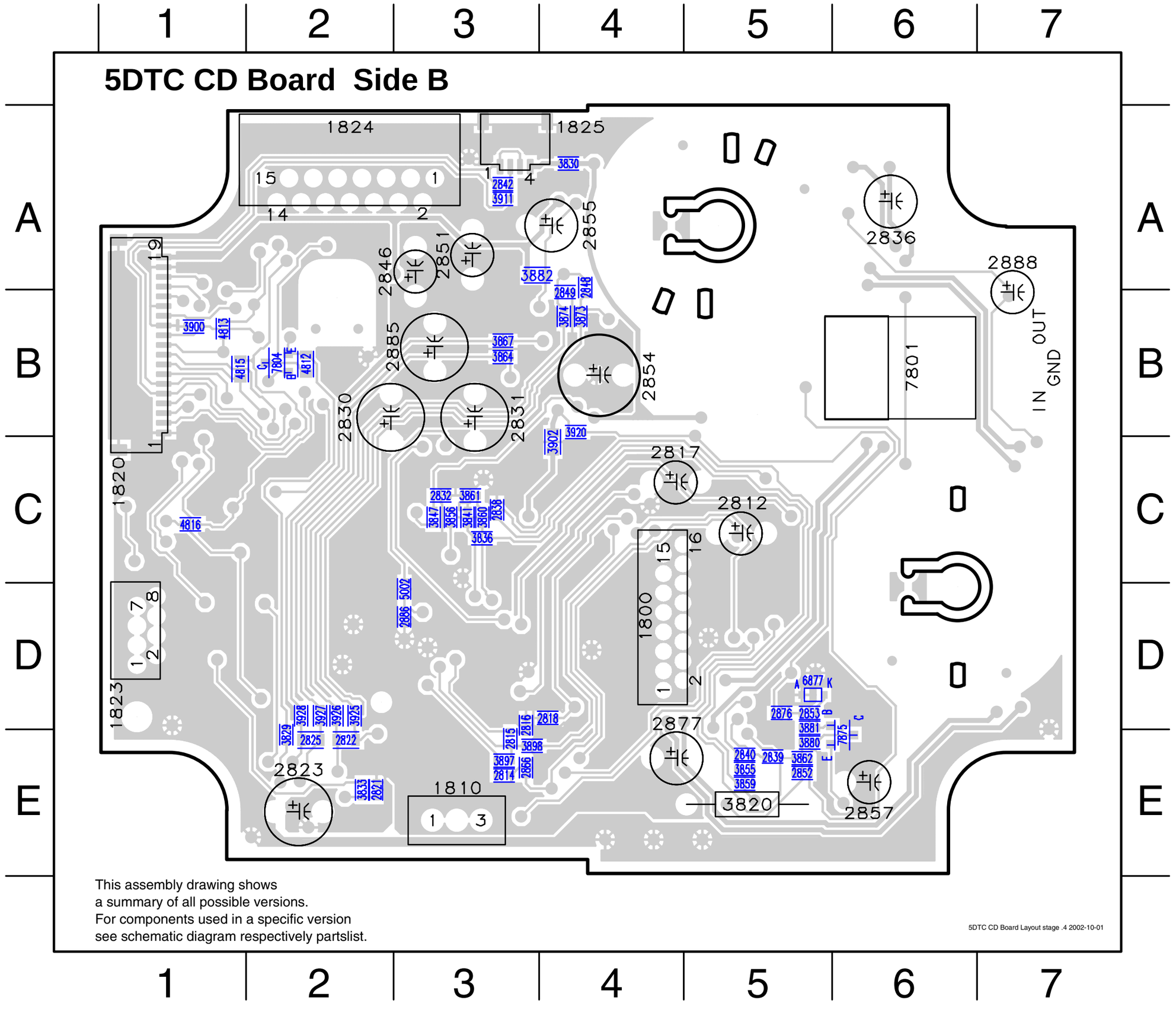
5DTC CD Board Layout stage .4 2002-10-01

Mapping for Component Layout

1800	D3	3851	C5
1810	E5	3852	B3
1823	D7	3853	B6
1824	A5	3854	B2
2811	B6	3857	C1
2812	C3	3865	A4
2813	C4	3866	D3
2817	C3	3868	A4
2819	E5	3869	B5
2820	E5	3870	A5
2823	E6	3871	B5
2824	B1	3872	E3
2826	B5	3875	A4
2827	C6	3876	B4
2828	C6	3877	A5
2829	C2	3878	D6
2830	B5	3879	A5
2831	B5	3883	A4
2833	B2	3884	A4
2834	C5	3887	B6
2835	B3	3888	C6
2836	A2	3889	E6
2837	A2	3890	E6
2841	E2	3891	C3
2843	B4	3892	C3
2844	B4	3893	C3
2845	B4	3894	C3
2846	A5	3895	D4
2847	B1	3896	C3
2850	B4	3899	C4
2851	A5	3901	C4
2854	B4	3903	C4
2855	A4	3904	C4
2857	E2	3905	B3
2860	C3	3906	C4
2861	D4	3907	D4
2863	D3	3908	C4
2864	D3	3909	C4
2865	D4	3910	C6
2869	D4	3912	A4
2870	E5	3916	C6
2871	E5	3917	B5
2872	E4	3918	A2
2873	E4	3919	B2
2874	D4	3922	C4
2875	E4	3923	B4
2877	D3	4804	A4
2878	D2	4807	A4
2879	E2	4809	C7
2880	E2	4810	C7
2881	D4	4811	C6
2882	C4	4814	C6
2883	C4	4820	C2
2884	C4	4821	C2
2885	B5	4822	C2
2887	D4	4824	C2
2888	A1	4835	D2
3801	C3	4836	A5
3802	D4	4837	B5
3803	C4	4838	C6
3804	D3	4840	A2
3805	C3	4841	B6
3806	D4	4843	D2
3807	E4	5001	B3
3808	E4	7800	C6
3809	E4	7801	B2
3810	E4	7802	B2
3811	E4	7810	B4
3812	D4	7811	D2
3813	C4	7876	C4
3814	D3	7877	C4
3815	D3	7878	C4
3816	D4	7879	E4
3817	E3		
3818	E3		
3819	E3		
3820	E3		
3821	E3		
3822	D2		
3823	D2		
3824	E2		
3825	D2		
3826	D2		
3827	D2		
3828	D2		
3831	D6		
3832	C6		
3834	D6		
3835	D6		
3837	C6		
3838	C5		
3839	C6		
3840	A5		
3842	B3		
3843	C2		
3844	B5		
3845	C6		
3846	B1		
3848	B4		
3849	C6		
3850	B2		

10-12

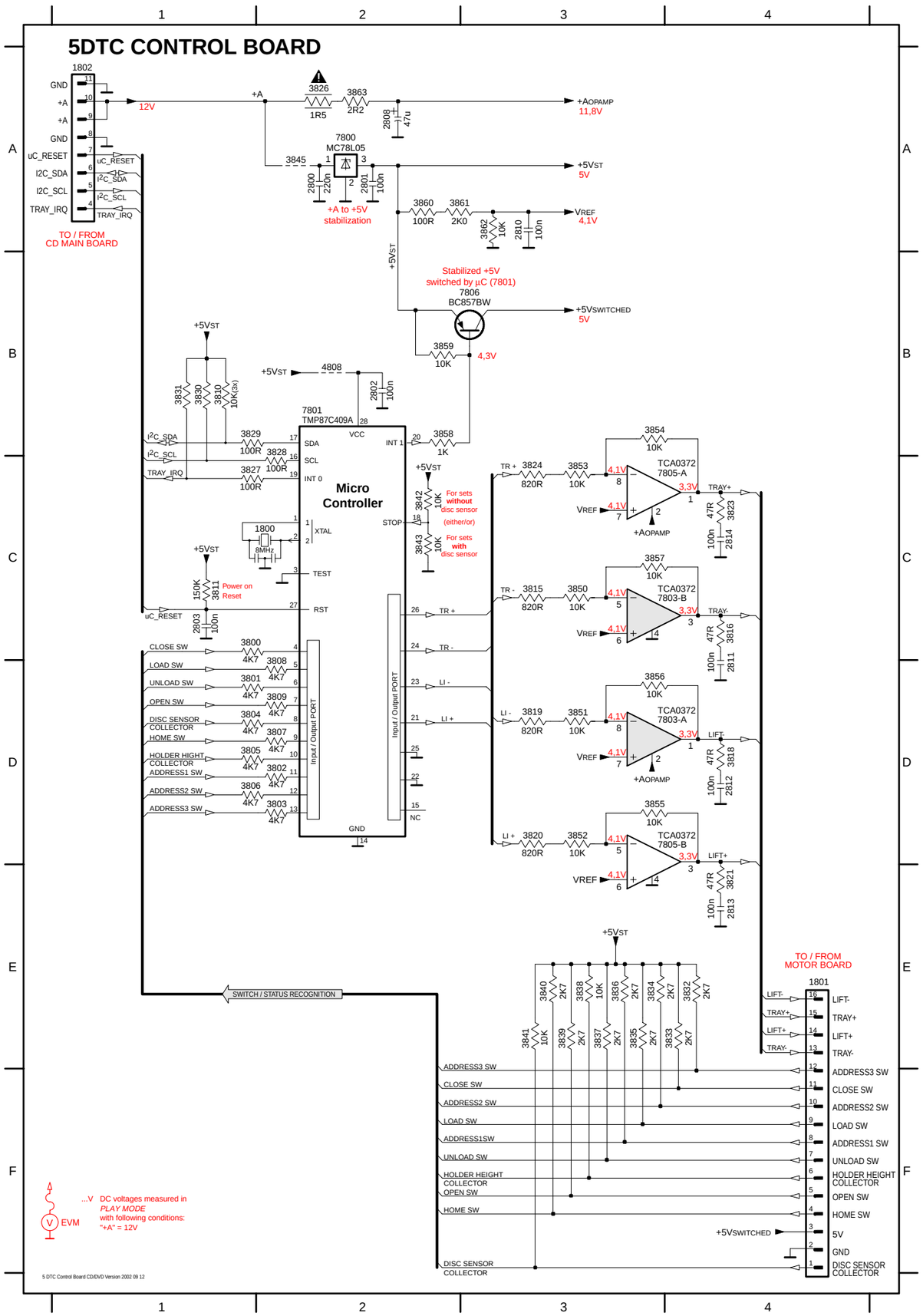
5DTC CD Board Side B



This assembly drawing shows
a summary of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

5DTC CD Board Layout stage .4 2002-10-01

1800 D5
1810 E3
1820 C1
1823 D1
1824 A3
1825 A4
2812 C5
2814 E4
2815 E4
2816 D4
2817 C5
2818 D4
2821 E3
2822 E3
2823 E2
2825 E2
2830 B2
2831 B4
2832 C3
2836 A6
2838 C4
2839 E5
2840 E5
2842 A4
2846 A3
2848 A4
2849 B4
2851 A3
2852 E6
2853 D6
2854 B5
2855 A4
2857 E6
2866 E4
2876 D5
2877 D5
2885 B3
2886 D3
2888 A7
3820 E5
3829 E2
3830 A4
3833 E3
3836 C3
3841 C3
3847 C3
3855 E5
3856 C3
3859 E5
3860 C3
3861 C3
3862 E6
3864 B4
3867 B4
3873 B4
3874 B4
3880 E6
3881 D6
3882 A4
3897 E4
3898 E4
3900 B1
3902 C4
3911 A4
3920 B4
3925 D3
3926 D2
3927 D2
3928 D2
4812 B2
4813 B2
4815 B2
4816 C1
5002 D3
6877 D6
7801 B6
7804 B2
7875 E6



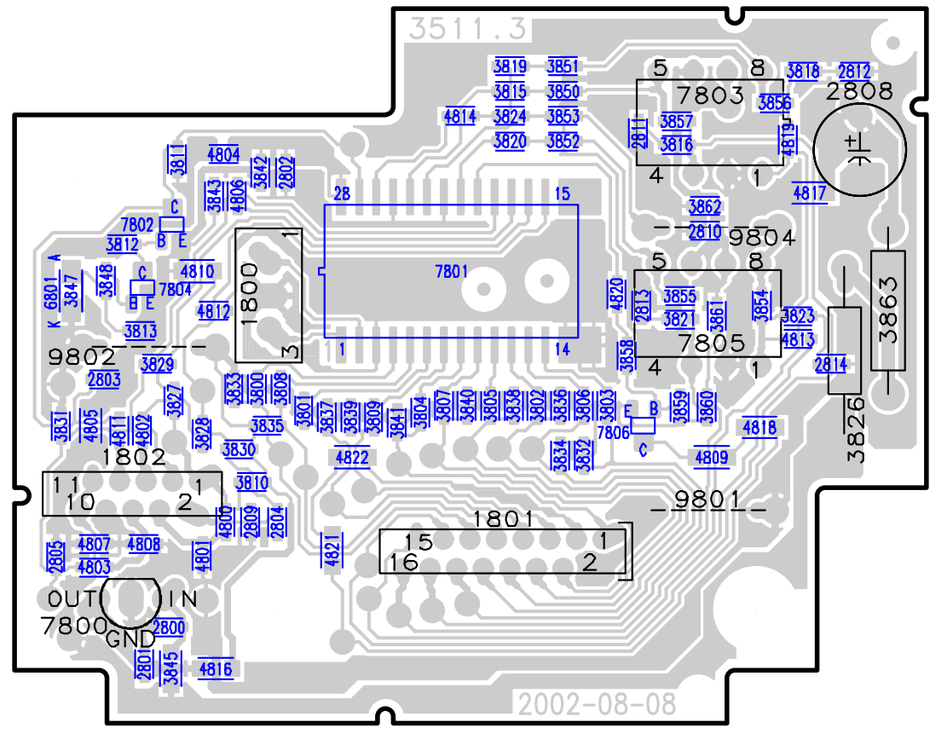
Mapping for Circuit Diagram

1800	C2	2810	A3	3804	D1	3811	C1	3824	C3	3833	E4	3841	E3	3854	B3	3862	A3	7805-B	D3
1801	E4	2811	D4	3805	D1	3815	C3	3826	A2	3834	E3	3842	C2	3855	D3	3863	A2	7806	B3
1802	A1	2812	D4	3806	D1	3816	C4	3827	C1	3835	E3	3843	C2	3856	D3	4808	B2		
2800	A2	2813	E4	3807	D2	3818	D4	3828	C2	3836	E3	3845	A2	3857	C3	7800	A2		
2801	A2	2814	C4	3808	D1	3819	D3	3829	B1	3837	E3	3850	C3	3858	B2	7801	B2		
2802	B2	3800	C1	3808	D2	3820	D3	3830	B1	3838	E3	3851	D3	3859	B3	7803-A	D3		
2803	C1	3802	D2	3809	D2	3821	E4	3831	B1	3839	E3	3852	D3	3860	A2	7803-B	C3		
2808	A2	3803	D2	3810	B1	3823	C4	3832	E4	3840	E3	3853	C3	3861	A2	7805-A	C3		

Mapping for Component Layout

1800	B2	2810	A5	3806	C4	3819	A4	3832	C4	3843	A2	3857	A5	4804	A2	4816	D2	7803	A5
1801	C4	2811	A5	3807	C3	3820	A4	3833	B2	3845	D2	3858	B5	4805	C1	4817	A6	7804	B2
1802	C2	2812	A6	3808	B2	3821	B5	3834	C4	3847	B1	3859	C5	4806	A2	4818	C5	7806	C5
2800	D2	2813	B5	3809	C3	3823	B6	3835	C2	3848	B1	3860	C5	4807	C1	4819	A6	9801	C5
2801	D2	2814	B6	3810	C2	3824	A4	3836	C4	3850	A4	3861	B5	4808	C2	4820	B5	9802	B2
2802	A2	3800	B2	3811	A2	3826	B6	3837	C3	3851	A4	3862	A5	4809	C5	4821	C3	9804	A5
2803	B1	3801	C3	3812	A1	3827	B2	3838	C4	3852	A4	3863	B6	4810	B2	4822	C3		
2804	C2	3802	C4	3813	B2	3828	C2	3839	C3	3853	A4	4800	C2	4811	C1	6801	B1		
2805	C1	3803	C4	3815	A4	3829	B2	3840	C4	3854	B5	4801	C2	4812	B2	7800	D2		
2808	A6	3804	C3	3816	A5	3830	C2	3841	C3	3855	B5	4802	C2	4813	B6	7801	B4		
2809	C2	3805	C4	3818	A6	3831	C1	3842	A2	3856	A6	4803	D1	4814	A4	7802	A2		

5DTC Control Board Copperside view



This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

5DTC Control Board Layout stage .3 2002-09-25

10-14

MP3 Board - Circuit Diagram

MP3-CD-2002

DSP

For Flash version: TMS320VC5416
For ROM version: TMS320VC5406

7451

only for FLASH version

Text version only

Flash EPROM

Am29LV800B

7450

EEPROM

M24C32

7458

Voltage stabilisation

7455 LM317D

for 5V front uP

74HCT1G04

74HC00D

16.93MHz CSTCV

TMS_RESET

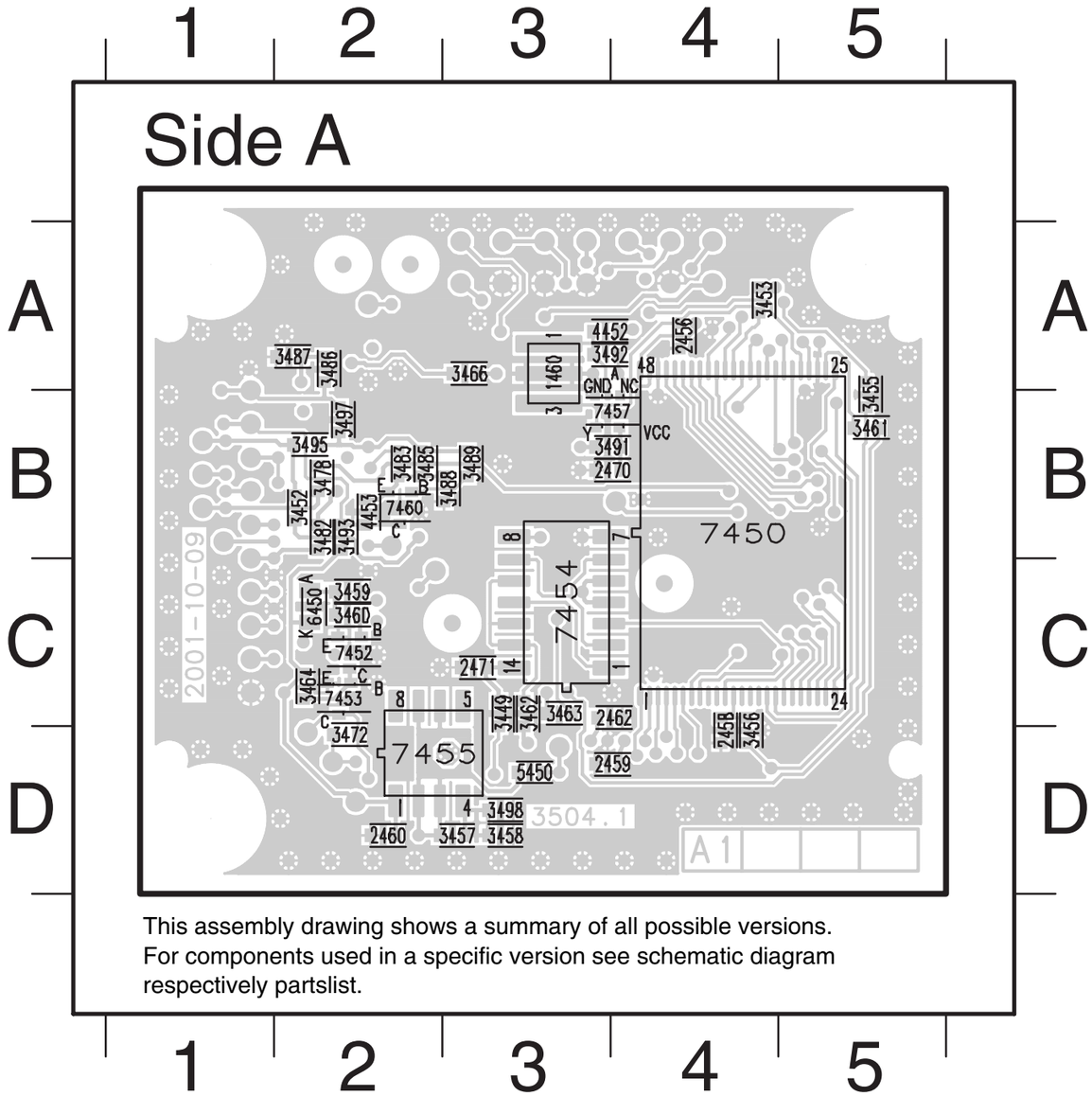
.... only for FLASH version
* .... only for ROM version

2451 B5
2452 B2
2453 B4
2454 B7
2455 C2
2456 C12
2457 D9
2458 C10
2459 D2
2460 E13
2461 D12
2462 D2
2463 D8
2464 G12
2465 G2
2466 G8
2467 H6
2468 H4
2469 H5
2470 D9
2471 E11
2472 D1
3449 E11
3450 A4
3451 B7
3452 H3
3453 A12
3454 C1
3455 C9
3456 C10
3457 D13
3458 D14
3459 F13
3460 F13
3461 E12
3462 E2
3463 F1
3464 F13
3465 A2
3466 H8
3467 F8
3468 F8
3469 E13
3470 F1
3471 E13
3472 H9
3473 G2
3474 G8
3475 G2
3476 H2
3477 H7
3478 B6
3479 H8
3480 H2
3481 H3
3482 H5
3483 H6
3484 H5
3485 I11
3486 I13
3487 I12
3488 I12
3489 I12
3490 H8
3491 D9
3492 F9
3493 H12
3494 H8
3495 H11
3496 H8
3497 I13
3498 D14
3499 A2
4450 C13
4452 F9
4453 I11
5450 B3
6450 E13
6451 E13
7450 A10
7451 D5
7452 F13
7453 F12
7454-A G11
7454-B F11
7454-C F11
7454-D G11
7455 D13
7456 E12
7457 E9
7458 A1
7460 I12

10-15

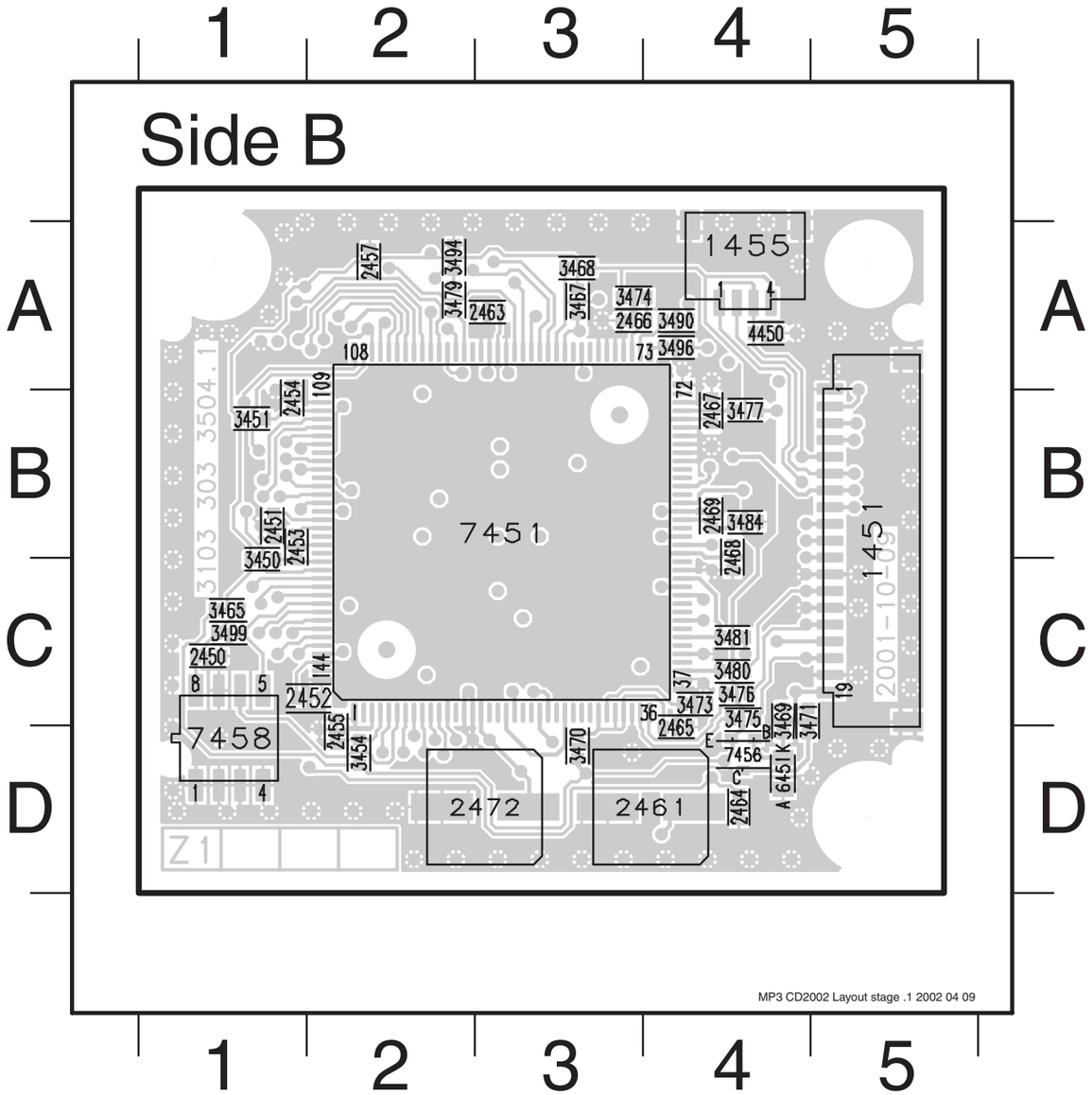
MP3 Board - Component Layout

1460 A3	3449 C3	3460 C2	3482 B2	3492 A3	6450 C2
2456 A4	3452 B2	3461 B5	3483 B2	3493 B2	7450 B4
2458 D4	3453 A4	3462 C3	3485 B2	3495 B2	7452 C2
2459 D4	3455 B5	3463 C3	3486 A2	3497 B2	7453 C2
2460 D2	3456 D4	3464 C2	3487 A2	3498 D3	7454 C3
2462 C4	3457 D3	3466 A3	3488 B3	4452 A3	7455 D2
2470 B4	3458 D3	3472 D2	3489 B3	4453 B2	7457 B4
2471 C3	3459 C2	3478 B2	3491 B4	5450 D3	7460 B2



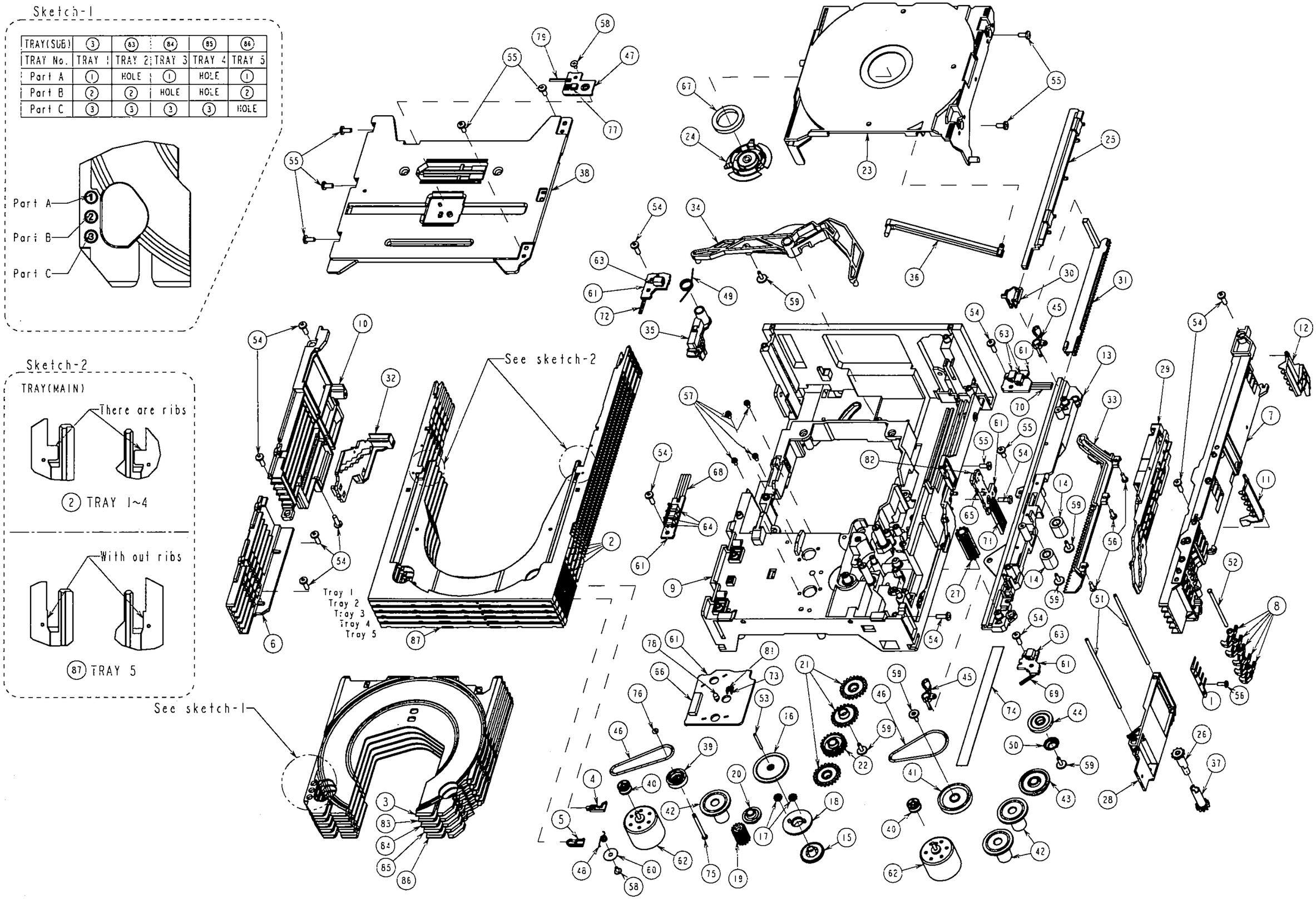
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

1451 B5	2457 A2	2469 B4	3469 C4	3479 A2	4450 A4
1455 A4	2461 D4	2472 D3	3470 D3	3480 C4	6451 D4
2450 C1	2463 A3	3450 C1	3471 C4	3481 C4	7451 B3
2451 B1	2464 D4	3451 B1	3473 C4	3484 B4	7456 D4
2452 C2	2465 D4	3454 D2	3474 A3	3490 A4	7458 D1
2453 B1	2466 A3	3465 C1	3475 C4	3494 A2	
2454 B1	2467 B4	3467 A3	3476 C4	3496 A4	
2455 D2	2468 B4	3468 A3	3477 B4	3499 C1	



10-16

Exploded view 5DTC mechanic - for orientation only



ELECTRICAL PARTSLIST 5DTC MODULE MP3CD Version CD Board

MECHANICAL PARTS

	3103 308 54710	**5DTC Module** (mechanic w/o electronic)
201	3103 309 05390	CD DRIVE DA12T3
252	4822 529 10387	Rubber damper CD DRIVE, FRONT
253	4822 529 10386	Rubber damper CD DRIVE, REAR

MISCELLANEOUS

	3103 308 67020	**MP3 Board**
1800	4822 267 11028	FFC-CONNECTOR 16P, Side entry
1820	2422 025 17303	FFC-CONNECTOR 19P, Side entry
1823	2422 025 16371	FFC-CONNECTOR 8P, Side entry
1824	4822 265 10979	FFC-CONNECTOR, 15P, Side entry
8001	3103 308 93090	FFC CABLE 16Pin 80mm BD
8051	3103 308 93100	FFC-CABLE 19Pin 90mm AD
8052	3103 308 93120	FFC CABLE 8Pin 80mm BD

CAPACITORS

2812	4822 124 11947	10µF	20%	16V
2813 ©	4822 126 13193	4,7nF	10%	63V
2814 ©	5322 126 11579	3,3nF	10%	63V
2815 ©	2020 552 94427	100pF	5%	50V
2816 ©	3198 017 42230	22nF	10%	50V
2817	4822 124 22726	4,7µF	20%	35V
2818 ©	3198 024 44730	47nF	5%	50V
2821 ©	2238 586 59812	100nF	10%	50V
2822 ©	4822 126 13344	1,5nF	5%	63V
2823	4822 124 42383	220µF	20%	4V
2824 ©	4822 126 14043	1µF	20%	16V
2825 ©	4822 126 13344	1,5nF	5%	63V
2826 ©	3198 017 34730	47nF	10%	16V
2827 ©	5322 126 11578	1nF	10%	63V
2828 ©	4822 126 11669	27pF	10%	50V
2829 ©	3198 017 34730	47nF	10%	16V
2830	4822 124 81286	47µF	20%	16V
2831	4822 124 81286	47µF	20%	16V
2832 ©	3198 017 31530	15nF	10%	50V
2833 ©	5322 126 11583	10nF	10%	63V
2834 ©	3198 017 31530	15nF	10%	50V
2835 ©	5322 126 11583	10nF	10%	63V
2836	4822 124 40433	47µF	20%	25V
2837 ©	3198 017 34730	47nF	10%	16V
2838 ©	3198 017 44740	470nF	20%	10V
2839 ©	2238 586 59812	100nF	10%	50V
2840 ©	4822 126 14549	33nF	10%	16V
2841 ©	2238 586 59812	100nF	10%	50V
2843 ©	2020 552 94427	100pF	5%	50V
2844 ©	5322 122 33861	120pF	5%	NP0
2845 ©	5322 122 33861	120pF	5%	NP0
2846	4822 124 40248	10µF	20%	63V
2847 ©	3198 017 41050	1µF	20%	10V
2848 ©	2020 552 94427	100pF	5%	50V
2849 ©	5322 122 33861	120pF	5%	NP0
2850 ©	5322 122 33861	120pF	5%	NP0
2851	4822 124 40248	10µF	20%	63V
2852 ©	4822 126 14549	33nF	10%	16V
2853 ©	5322 126 11583	10nF	10%	63V
2854	4822 124 12245	220µF	20%	16V
2855	4822 124 11912	220µF	20%	6,3V
2860 ©	4822 122 33753	150pF	5%	50V
2861 ©	4822 122 33753	150pF	5%	50V
2863 ©	4822 126 14508	180pF	5%	50V
2864 ©	4822 126 14508	180pF	5%	50V
2865 ©	4822 126 14508	180pF	5%	50V
2866 ©	4822 126 14508	180pF	5%	50V

CAPACITORS

2869 ©	3198 017 34730	47nF	10%	16V
2870 ©	4822 126 13883	220pF	5%	50V
2871 ©	4822 126 13883	220pF	5%	50V
2872 ©	4822 126 13883	220pF	5%	50V
2873 ©	4822 126 13883	220pF	5%	50V
2874 ©	4822 126 13883	220pF	5%	50V
2875 ©	4822 126 13883	220pF	5%	50V
2876 ©	3198 017 44740	470nF	20%	10V
2877	4822 124 40433	47µF	20%	25V
2878 ©	2238 586 59812	100nF	10%	50V
2879 ©	5322 126 11578	1nF	10%	63V
2880 ©	2222 867 15339	33pF	5%	50V
2881 ©	4822 126 14249	560pF	10%	50V
2882 ©	4822 126 14226	82pF		50V
2883 ©	3198 017 44740	470nF	20%	10V
2884 ©	3198 017 44740	470nF	20%	10V
2885	4822 124 40196	220µF	20%	16V
2886 ©	2238 586 59812	100nF	10%	50V
2887 ©	3198 017 34730	47nF	10%	16V

RESISTORS

3801 ©	4822 051 30563	56kΩ	5%	0,06W
3802 ©	4822 051 30563	56kΩ	5%	0,06W
3803 ©	4822 117 12925	47kΩ	1%	0,06W
3804 ©	4822 117 12925	47kΩ	1%	0,06W
3805 ©	4822 117 12925	47kΩ	1%	0,06W
3806 ©	4822 117 12925	47kΩ	1%	0,06W
3807 ©	4822 051 30103	10kΩ	5%	0,06W
3808 ©	4822 051 30103	10kΩ	5%	0,06W
3809 ©	4822 051 30103	10kΩ	5%	0,06W
3810 ©	4822 051 30103	10kΩ	5%	0,06W
3811 ©	4822 051 30103	10kΩ	5%	0,06W
3812 ©	4822 051 30103	10kΩ	5%	0,06W
3813 ©	4822 051 30222	2,2kΩ	5%	0,06W
3814 ©	4822 051 30222	2,2kΩ	5%	0,06W
3815 ©	4822 051 30222	2,2kΩ	5%	0,06W
3816 ©	4822 051 30222	2,2kΩ	5%	0,06W
3817 ©	4822 051 30479	47Ω	5%	0,06W
3818 ©	4822 051 30479	47Ω	5%	0,06W
3819 ©	4822 051 30479	47Ω	5%	0,06W
3820 ⚠	4822 052 10478	4,7Ω	5%	NFR25
3821 ©	4822 117 12917	1Ω	5%	0,06W
3822 ©	4822 051 30103	10kΩ	5%	0,06W
3823 ©	4822 051 30102	1kΩ	5%	0,06W
3824 ©	4822 051 30474	470kΩ	5%	0,06W
3825 ©	5322 117 13029	47kΩ	1%	0,06W
3826 ©	4822 117 12891	220kΩ	1%	0,06W
3827 ©	5322 117 13056	8,2kΩ	1%	0,06W
3828 ©	5322 117 13052	2,7kΩ	1%	0.06W
3829 ©	4822 051 30121	120Ω	5%	0,06W
3831 ©	4822 051 30471	470Ω	5%	0,06W
3832 ©	4822 051 30471	470Ω	5%	0,06W
3833 ©	4822 051 30121	120Ω	5%	0,06W
3834 ©	4822 051 30472	4,7kΩ	5%	0,06W
3836 ©	4822 117 13632	100kΩ	1%	0,06W
3837 ©	4822 051 30471	470Ω	5%	0,06W
3839 ©	4822 051 30471	470Ω	5%	0,06W
3840 ©	4822 051 30223	22kΩ	5%	0,06W
3841 ©	4822 051 30153	15kΩ	5%	0,06W
3842 ©	4822 051 30102	1kΩ	5%	0,06W
3843 ©	4822 051 30102	1kΩ	5%	0,06W
3844 ©	4822 051 30101	100Ω	5%	0,06W
3845 ©	4822 051 30471	470Ω	5%	0,06W

ELECTRICAL PARTSLIST 5DTC MODULE MP3CD Version CD Board

RESISTORS

3846 ©	4822 051 30102	1kΩ	5%	0,06W	
3847 ©	4822 117 12968	820Ω	5%	0,06W	
3848 ©	4822 051 30221	220Ω	5%	0,06W	
3849 ©	4822 051 30471	470Ω	5%	0,06W	
3850 ©	4822 117 12925	47kΩ	1%	0,06W	
3851 ©	4822 117 12968	820Ω	5%	0,06W	
3852 ©	4822 051 30221	220Ω	5%	0,06W	
3854 ©	4822 117 12925	47kΩ	1%	0,06W	
3855 ©	4822 051 30393	39kΩ	5%	0,06W	
3856 ©	4822 051 30472	4,7kΩ	5%	0,06W	
3857 ©	4822 051 30008	CHIP JUMPER 0603			
3859 ©	4822 117 13632	100kΩ	1%	0,06W	
3860 ©	4822 051 30123	12kΩ	5%	0,06W	
3861 ©	4822 051 30153	15kΩ	5%	0,06W	
3862 ©	4822 051 30393	39kΩ	5%	0,06W	
3864 ©	4822 051 30333	33kΩ	5%	0,06W	
3865 ©	4822 051 30181	180Ω	5%	0,06W	
3866 ©	4822 117 13608	4,7Ω	5%	0,06W	
3867 ©	4822 051 30333	33kΩ	5%	0,06W	
3868 ©	4822 051 30183	18kΩ	5%	0,06W	
3869 ©	4822 051 30183	18kΩ	5%	0,06W	
3870 ©	4822 051 30681	680Ω	5%	0,06W	
3871 ©	4822 051 30181	180Ω	5%	0,06W	
3872 ©	4822 051 30272	2,7kΩ	5%	0,06W	
3873 ©	4822 051 30333	33kΩ	5%	0,06W	
3874 ©	4822 051 30333	33kΩ	5%	0,06W	
3875 ©	4822 051 30183	18kΩ	5%	0,06W	
3876 ©	4822 051 30183	18kΩ	5%	0,06W	
3877 ©	4822 051 30681	680Ω	5%	0,06W	
3878 ©	4822 051 30471	470Ω	5%	0,06W	
3879 ©	4822 051 30223	22kΩ	5%	0,06W	
3880 ©	4822 051 30339	33Ω	5%	0,06W	
3881 ©	4822 051 30151	150Ω	5%	0,06W	
3883 ©	4822 051 30472	4,7kΩ	5%	0,06W	
3884 ©	4822 051 30472	4,7kΩ	5%	0,06W	
3888 ©	4822 051 30103	10kΩ	5%	0,06W	
3889 ©	4822 051 30471	470Ω	5%	0,06W	
3890 ©	4822 051 30471	470Ω	5%	0,06W	
3891 ©	4822 051 30102	1kΩ	5%	0,06W	
3892 ©	4822 051 30102	1kΩ	5%	0,06W	
3893 ©	4822 051 30471	470Ω	5%	0,06W	
3895 ©	4822 051 30273	27kΩ	5%	0,06W	
3896 ©	4822 051 30101	100Ω	5%	0,06W	
3897 ©	4822 051 30333	33kΩ	5%	0,06W	
3898 ©	4822 051 30221	220Ω	5%	0,06W	
3899 ©	4822 051 30272	2,7kΩ	5%	0,06W	
3901 ©	4822 051 30561	560Ω	5%	0,06W	
3902 ©	4822 117 11139	1,5kΩ	1%	0,1W	
3903 ©	4822 051 30332	3,3kΩ	5%	0,06W	
3904 ©	4822 051 30332	3,3kΩ	5%	0,06W	
3905 ©	4822 051 30681	680Ω	5%	0,06W	
3906 ©	4822 051 30471	470Ω	5%	0,06W	
3907 ©	4822 117 12968	820Ω	5%	0,06W	
3908 ©	4822 051 30222	2,2kΩ	5%	0,06W	
3909 ©	4822 117 13632	100kΩ	1%	0,06W	
3910 ©	4822 051 30471	470Ω	5%	0,06W	
3912 ©	4822 051 30221	220Ω	5%	0,06W	
3916 ©	4822 051 30471	470Ω	5%	0,06W	
3917 ©	4822 117 13608	4,7Ω	5%	0,06W	
3918 ©	4822 051 30103	10kΩ	5%	0,06W	
3919 ©	4822 051 30153	15kΩ	5%	0,06W	
3920 ©	4822 051 30101	100Ω	5%	0,06W	
3923 ©	4822 051 30103	10kΩ	5%	0,06W	

RESISTORS

3925 ©	4822 051 30101	100Ω	5%	0,06W	
3926 ©	4822 051 30101	100Ω	5%	0,06W	
3927 ©	4822 051 30101	100Ω	5%	0,06W	
3928 ©	4822 051 30101	100Ω	5%	0,06W	
4807 ©	4822 051 30008	CHIP JUMPER 0603			
4809 ©	4822 051 30008	CHIP JUMPER 0603			
4820 ©	4822 051 30008	CHIP JUMPER 0603			
4824 ©	4822 051 30008	CHIP JUMPER 0603			
4835 ©	4822 051 20008	CHIP JUMPER 0805			
4836 ©	4822 051 20008	CHIP JUMPER 0805			
4837 ©	4822 051 20008	CHIP JUMPER 0805			
4838 ©	4822 051 20008	CHIP JUMPER 0805			
4840 ©	4822 051 20008	CHIP JUMPER 0805			
4841 ©	4822 051 20008	CHIP JUMPER 0805			
4843 ©	4822 051 20008	CHIP JUMPER 0805			

COILS

1810	2422 540 98519	RESONATOR 8,467MHz
5001 ©	2422 549 44607	FERRITE BEAD
5002 ©	2422 549 44607	FERRITE BEAD

DIODES

6877 ©	9322 129 34685	BZX284-C3V9

TRANSISTORS

7875 ©	5322 130 42755	BC847C
7876 ©	5322 130 42755	BC847C
7877 ©	5322 130 42755	BC847C
7878 ©	5322 130 42755	BC847C
7879 ©	5322 130 60123	BC807-40

INTEGRATED CIRCUITS

7800 ©	9352 684 20557	SAA7325H/T/M2B, Signal Processor
7801	4822 209 72554	MC7808CT 8V Regulator
7802 ©	9322 181 79668	MM1469PH Motor Driver
7810 ©	5322 209 82941	LM358D, Dual Opamp
7811 ©	5322 209 82941	LM358D, Dual Opamp

ELECTRICAL PARTSLIST 5DTC MODULE MP3CD Version Control Board

MECHANICAL PARTS

	3103 308 54710	**5DTC Module** (mechanic w/o electronic)

MISCELLANEOUS

1801	2422 025 17065	FFC-CONNECTOR 16P, top entry
1802	2422 025 17788	FFC-CONNECTOR 8P, top entry
8021	3103 308 93110	FFC-CABLE 16Pin 60mm AD

CAPACITORS

2800 ©	4822 126 13879	220nF	20%	16V
2801 ©	2238 586 59812	100nF	10%	50V
2802 ©	2238 586 59812	100nF	10%	50V
2803 ©	2238 586 59812	100nF	10%	50V
2808	4822 124 40433	47µF	20%	25V
2810 ©	3198 017 34730	47nF	10%	16V
2811 ©	2238 586 59812	100nF	10%	50V
2812 ©	2238 586 59812	100nF	10%	50V
2813 ©	2238 586 59812	100nF	10%	50V
2814 ©	2238 586 59812	100nF	10%	50V

RESISTORS

3800 ©	4822 051 30472	4,7kΩ	5%	0,06W
3801 ©	4822 051 30472	4,7kΩ	5%	0,06W
3802 ©	4822 051 30472	4,7kΩ	5%	0,06W
3803 ©	4822 051 30472	4,7kΩ	5%	0,06W
3804 ©	4822 051 30472	4,7kΩ	5%	0,06W
3805 ©	4822 051 30472	4,7kΩ	5%	0,06W
3806 ©	4822 051 30472	4,7kΩ	5%	0,06W
3807 ©	4822 051 30472	4,7kΩ	5%	0,06W
3808 ©	4822 051 30472	4,7kΩ	5%	0,06W
3809 ©	4822 051 30472	4,7kΩ	5%	0,06W
3810 ©	4822 051 30103	10kΩ	5%	0,06W
3811 ©	4822 051 30154	150kΩ	5%	0,0625W
3815 ©	5322 117 13057	820Ω	1%	0,06W
3816 ©	4822 051 30479	47Ω	5%	0,06W
3818 ©	4822 051 30479	47Ω	5%	0,06W
3819 ©	5322 117 13057	820Ω	1%	0,06W
3820 ©	5322 117 13057	820Ω	1%	0,06W
3821 ©	4822 051 30479	47Ω	5%	0,06W
3823 ©	4822 051 30479	47Ω	5%	0,06W
3824 ©	5322 117 13057	820Ω	1%	0,06W
3826 ⚠	4822 117 12148	1,5Ω	5%	0,33W
3827 ©	4822 051 30101	100Ω	5%	0,06W
3828 ©	4822 051 30101	100Ω	5%	0,06W
3829 ©	4822 051 30101	100Ω	5%	0,06W
3830 ©	4822 051 30103	10kΩ	5%	0,06W
3831 ©	4822 051 30103	10kΩ	5%	0,06W
3832 ©	4822 051 30272	2,7kΩ	5%	0,06W
3833 ©	4822 051 30272	2,7kΩ	5%	0,06W
3834 ©	4822 051 30272	2,7kΩ	5%	0,06W
3835 ©	4822 051 30272	2,7kΩ	5%	0,06W
3836 ©	4822 051 30272	2,7kΩ	5%	0,06W
3837 ©	4822 051 30272	2,7kΩ	5%	0,06W
3838 ©	4822 051 30103	10kΩ	5%	0,06W
3839 ©	4822 051 30272	2,7kΩ	5%	0,06W
3840 ©	4822 051 30272	2,7kΩ	5%	0,06W
3841 ©	4822 051 30103	10kΩ	5%	0,06W
3842 ©	4822 051 30103	10kΩ	5%	0,06W
3845 ©	4822 051 20159	15Ω	5%	0,1W
3850 ©	4822 117 12706	10kΩ	1%	0,06W
3851 ©	4822 117 12706	10kΩ	1%	0,06W
3852 ©	4822 117 12706	10kΩ	1%	0,06W
3853 ©	4822 117 12706	10kΩ	1%	0,06W
3854 ©	4822 117 12706	10kΩ	1%	0,06W

RESISTORS

3855 ©	4822 117 12706	10kΩ	1%	0,06W
3856 ©	4822 117 12706	10kΩ	1%	0,06W
3857 ©	4822 117 12706	10kΩ	1%	0,06W
3858 ©	4822 051 30102	1kΩ	5%	0,06W
3859 ©	4822 051 30103	10kΩ	5%	0,06W
3860 ©	5322 117 13017	100Ω	1%	0,06W
3861 ©	2322 704 62002	2kΩ	1%	0,06W
3862 ©	4822 117 12706	10kΩ	1%	0,06W
3863	4822 053 10228	2,2Ω	5%	1W
4800 ©	4822 051 30008	CHIP JUMPER 0603		
4802 ©	4822 051 30008	CHIP JUMPER 0603		
4803 ©	4822 051 30008	CHIP JUMPER 0603		
4804 ©	4822 051 30008	CHIP JUMPER 0603		
4805 ©	4822 051 20008	CHIP JUMPER 0805		
4806 ©	4822 051 30008	CHIP JUMPER 0603		
4807 ©	4822 051 30008	CHIP JUMPER 0603		
4808 ©	4822 051 30008	CHIP JUMPER 0603		
4809 ©	4822 051 20008	CHIP JUMPER 0805		
4810 ©	4822 051 20008	CHIP JUMPER 0805		
4811 ©	4822 051 30008	CHIP JUMPER 0603		
4812 ©	4822 051 30008	CHIP JUMPER 0603		
4813 ©	4822 051 30008	CHIP JUMPER 0603		
4814 ©	4822 051 30008	CHIP JUMPER 0603		
4816 ©	4822 051 20008	CHIP JUMPER 0805		
4817 ©	4822 051 20008	CHIP JUMPER 0805		
4818 ©	4822 051 20008	CHIP JUMPER 0805		
4819 ©	4822 051 30008	CHIP JUMPER 0603		
4820 ©	4822 051 30008	CHIP JUMPER 0603		
4821 ©	4822 051 20008	CHIP JUMPER 0805		
4822 ©	4822 051 20008	CHIP JUMPER 0805		

COILS

1800	4822 242 72066	CERAMIC FILTER 8,0MHz

TRANSISTORS

7806 ©	3198 010 42320	BC857BW

INTEGRATED CIRCUITS

7800	4822 209 72042	MC78L05ACP, STABILIZER
7801 ©	3103 307 01640	TMP87P809M Microcontroller
7803	4822 209 62059	TCA0372DP1, 2-FOLD OP-AMP.
7805	4822 209 62059	TCA0372DP1, 2-FOLD OP-AMP.

ELECTRICAL PARTSLIST 5DTC MODULE MP3CD Version MP3 Board

MISCELLANEOUS

1451	2422 025 17303	FFC-CONNECTOR 19P,side entry

CAPACITORS

2450 ©	2238 586 59812	100nF	10%	50V	
2451 ©	3198 017 41050	1µF	20%	10V	
2452 ©	3198 017 41050	1µF	20%	10V	
2453 ©	2238 586 59812	100nF	10%	50V	
2454 ©	2238 586 59812	100nF	10%	50V	
2455 ©	2238 586 59812	100nF	10%	50V	
2456 ©	2238 586 59812	100nF	10%	50V	
2457 ©	5322 126 11583	10nF	10%	63V	
2458 ©	5322 126 11583	10nF	10%	63V	
2459 ©	3198 017 41050	1µF	20%	10V	
2460 ©	2238 586 59812	100nF	10%	50V	
2461 ©	4822 124 81059	220µF	20%	4V	
2462 ©	3198 017 41050	1µF	20%	10V	
2463 ©	3198 017 41050	1µF	20%	10V	
2464 ©	2238 586 59812	100nF	10%	50V	
2465 ©	2238 586 59812	100nF	10%	50V	
2466 ©	2238 586 59812	100nF	10%	50V	
2467 ©	3198 017 41050	1µF	20%	10V	
2468 ©	3198 017 41050	1µF	20%	10V	
2469 ©	2238 586 59812	100nF	10%	50V	
2470 ©	2238 586 59812	100nF	10%	50V	
2471 ©	2238 586 59812	100nF	10%	50V	

RESISTORS

3449 ©	4822 051 30101	100Ω	5%	0,06W
3450 ©	4822 117 12971	15Ω	5%	0,06W
3451 ©	4822 117 12971	15Ω	5%	0,06W
3452 ©	4822 051 30101	100Ω	5%	0,06W
3453 ©	4822 051 30109	10Ω	5%	0,06W
3454 ©	4822 117 12971	15Ω	5%	0,06W
3455 ©	4822 051 30102	1kΩ	5%	0,06W
3456 ©	4822 051 30102	1kΩ	5%	0,06W
3457 ©	5322 117 13051	680Ω	1%	0,06W
3458 ©	5322 117 13061	180Ω	1%	0,06W
3459 ©	4822 051 30221	220Ω	5%	0,06W
3460 ©	4822 051 30102	1kΩ	5%	0,06W
3461 ©	4822 051 30479	47Ω	5%	0,06W
3462 ©	4822 051 30101	100Ω	5%	0,06W
3463 ©	4822 051 30101	100Ω	5%	0,06W
3464 ©	4822 051 30103	10kΩ	5%	0,06W
3465 ©	4822 051 30101	100Ω	5%	0,06W
3466 ©	4822 051 30471	470Ω	5%	0,06W
3467 ©	4822 051 30103	10kΩ	5%	0,06W
3468 ©	4822 051 30103	10kΩ	5%	0,06W
3469 ©	4822 051 30101	100Ω	5%	0,06W
3470 ©	4822 117 12971	15Ω	5%	0,06W
3471 ©	4822 051 30339	33Ω	5%	0,06W
3472 ©	4822 051 30154	150kΩ	5%	0,06W
3473 ©	4822 117 13632	100kΩ	1%	0,06W
3474 ©	4822 117 12971	15Ω	5%	0,06W
3475 ©	4822 051 30101	100Ω	5%	0,06W
3476 ©	4822 051 30101	100Ω	5%	0,06W
3477 ©	4822 051 30471	470Ω	5%	0,06W
3478 ©	4822 051 30471	470Ω	5%	0,06W
3479 ©	4822 051 30471	470Ω	5%	0,06W
3480 ©	4822 051 30101	100Ω	5%	0,06W
3481 ©	4822 051 30101	100Ω	5%	0,06W
3482 ©	4822 051 30471	470Ω	5%	0,06W
3483 ©	4822 051 30101	100Ω	5%	0,06W

RESISTORS

3484 ©	4822 117 12971	15Ω	5%	0,06W
3486 ©	4822 051 30101	100Ω	5%	0,06W
3488 ©	4822 117 13632	100kΩ	1%	0,06W
3489 ©	4822 051 30103	10kΩ	5%	0,06W
3490 ©	4822 051 30101	100Ω	5%	0,06W
3491 ©	4822 051 30479	47Ω	5%	0,06W
3492 ©	4822 051 30105	1MΩ	5%	0,06W
3493 ©	4822 051 30103	10kΩ	5%	0,06W
3494 ©	4822 051 30103	10kΩ	5%	0,06W
3495 ©	4822 051 30103	10kΩ	5%	0,06W
3497 ©	4822 051 30103	10kΩ	5%	0,06W
3498 ©	4822 051 30332	3,3kΩ	5%	0,06W
3499 ©	4822 051 30103	10kΩ	5%	0,06W
4450 ©	4822 051 30008	CHIP JUMPER 0603		

COILS

1460	4822 242 10989	CER.RES. 16,9MHz
5450 ©	4822 157 11074	100µH

DIODES

6450 ©	4822 130 11411	BZX284-C3V3
6451 ©	4822 130 11366	BZX284-C3V9
7454	4822 130 34174	BZX79-B4V7

TRANSISTORS

7452 ©	3198 010 42310	BC847BW
7453 ©	3198 010 42310	BC847BW
7456 ©	3198 010 42310	BC847BW
7460 ©	3198 010 42310	BC847BW

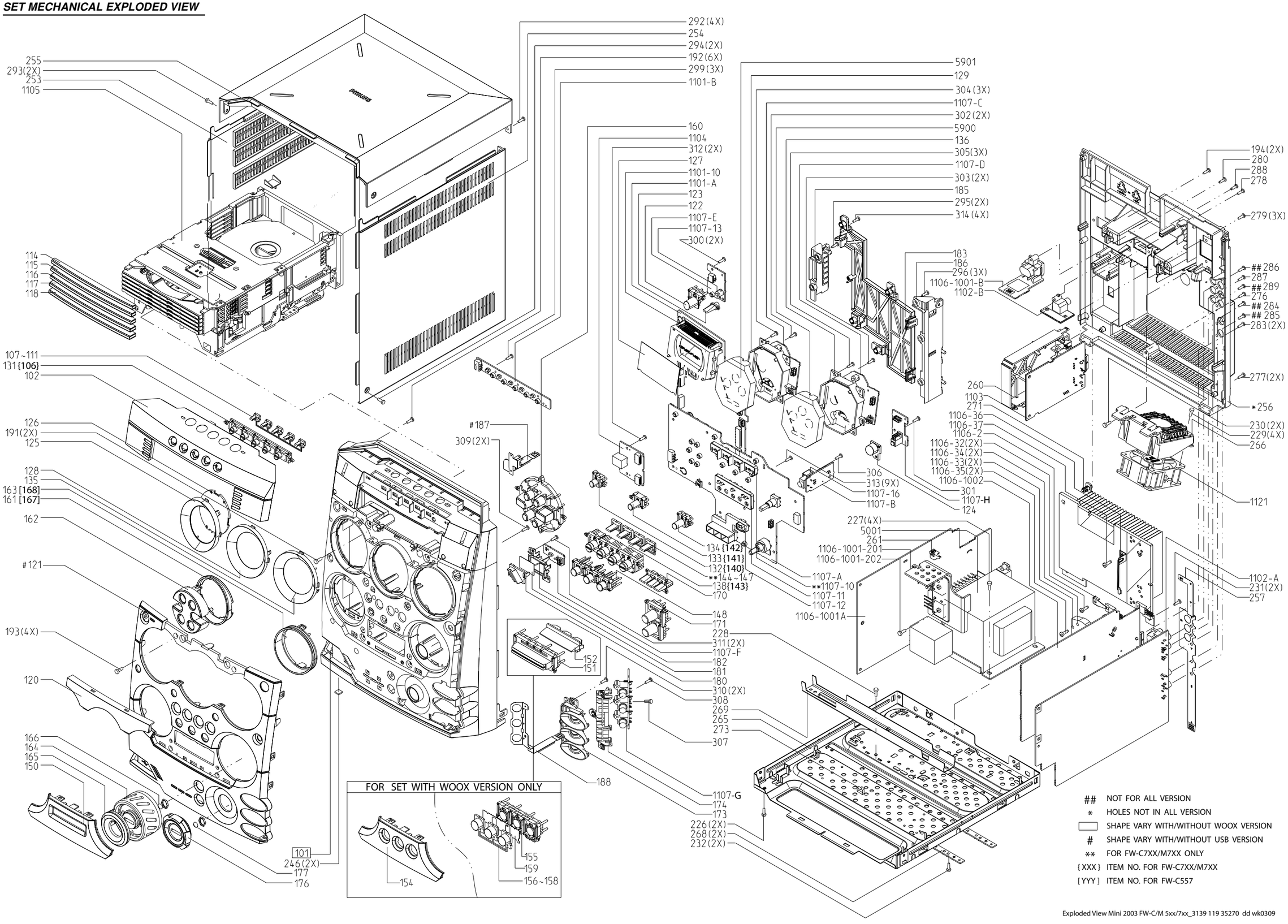
INTEGRATED CIRCUITS

7451 ©	not available	please order complete MP3 Board
7455 ©	4822 209 17108	LM317LD Voltage Regulator
7457 ©	9352 456 50115	HC1G04, Inverter
7458 ©	9322 130 41668	M24C64, EEPROM

3103 308 67020 **MP3 Board**

11-1

SET MECHANICAL EXPLODED VIEW



= NOT FOR ALL VERSION
* = HOLES NOT IN ALL VERSION
▭ = SHAPE VARY WITH/WITHOUT WOOX VERSION
= SHAPE VARY WITH/WITHOUT USB VERSION
** = FOR FW-C7XX/M7XX ONLY
{XXX} = ITEM NO. FOR FW-C7XX/M7XX
[YYY] = ITEM NO. FOR FW-C557

Exploded View Mini 2003 FW-C/M 5xx/7xx_3139 119 35270 dd wk0309

11-2

MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT

0101	3139 257 51471	Cabinet Front	0160	3139 118 19841	Button Set Func Control	5001	3139 118 32711	⚠ Mains Transformer /21	191	D3 x 12
0102	3139 257 51481	Panel Front 5DTC	0161	3139 118 19861	Cover Ring Func Control Foil	5001	3139 118 32721	⚠ Mains Transformer /22	192	D2 x 6
0106	3139 257 50221	Button Set 5DTC Play	0162	3139 257 50951	Cap Func Control	5900	3139 110 53521	Meter VU	193	D3 x 12
0107	3139 114 77741	Lightguide 5DTC Play 1	0163	3139 118 19891	Cover Ring Volume Foil	5901	3139 110 53521	Meter VU	194	D3 x 12
0108	3139 114 77751	Lightguide 5DTC Play 2	0164	3139 114 78031	Knob Volume Rotary	8202	3139 110 35350	FFC Foil 11P/220/11P AD	226	M3 x 6
0109	3139 114 77761	Lightguide 5DTC Play 3	0165	3139 118 19881	Cap Knob Volume	8203	3139 110 35010	FFC Foil 07P/340/07P AD	227	M3 x 10
0110	3139 114 77771	Lightguide 5DTC Play 4	0166	4822 492 51374	Ring	8404	3139 111 02511	FFC Foil 08P/300/08P AD Fold	228	M3 x 6
0111	3139 114 77781	Lightguide 5DTC Play 5	0170	3139 114 78161	Lightguide Game Sound	8405	3139 110 35280	FFC Foil 10P/120/10P AD	229	D3 x 12
0114	3139 257 50231	Cover Tray 5DTC 1	0171	3139 257 50401	Button MIX-IT/Game Mode	8407	3139 110 34920	FFC Foil 08P/280/08P BD	230	M3 x 12
0115	3139 257 50241	Cover Tray 5DTC 2	0173	3139 114 78791	Cover Game Port	8408	3139 111 02491	FFC Foil 19P/280/19P AD	231	M3 x 6
0116	3139 257 50251	Cover Tray 5DTC 3	0174	3139 114 78191	Bracket Game Port	8410	3139 111 02501	FFC Foil 05P/180/05P AD Fold	232	M3 x 6
0117	3139 257 50261	Cover Tray 5DTC 4	0176	3139 118 19931	Knob Game Sound Control	8412	3139 110 35031	FFC Foil 08P/140/08P AD	276	M3 x 6
0118	3139 257 50271	Cover Tray 5DTC 5	0177	4822 492 51374	Ring	8413	3139 110 35400	FFC Foil 09P/340/09P AD	277	M3 x 10
0120	3139 257 51501	Panel Front Display	0182	3139 114 78381	Holder LED USB	8415	3139 110 34600	FFC Foil 07P/280/07P AD	278	D3 x 16
0121	3139 257 50391	Panel Front Control USB /21	0183	3139 114 78301	Bracket PCB Front Display	8417	3139 110 36150	FFC Foil 15P/280/15P AD	279	D3 x 12
0121	3139 257 51491	Panel Front Control USB /22	0185	3139 114 72750	Bracket CDC Left	8501	3139 110 33940	FFC Foil 04P/180/04P BD	280	D3 x 12
0122	3139 257 50281	Button ECO/Standby Power	0186	3139 114 72760	Bracket CDC Right	8601	3139 111 02481	FFC Foil 08P/180/08P AD	283	D3 x 12
0123	3139 114 77901	Lightguide Power ECO	0246	3139 113 27140	Foot Rubber 4mm				286	D3 x 12
0124	3139 114 77911	Lightguide IR	0253	3139 114 79281	Panel Left				287	D3 x 12
0125	3139 257 50291	Cover Ring FTD	0254	3139 114 79301	Panel Right				288	D3 x 12
0126	3139 118 19791	Window Display FTD	0255	3139 114 78801	Cover Top				292	M3 x 12
0128	3139 257 50301	Cover Ring VU Meter 1 (Left)	0256	3139 114 78361	Panel Rear				293	M3 x 12
0129	3139 114 78261	Bracket VU Meter 1 (Left)	0266	3139 114 79311	Bracket Fan				294	M3 x 6
0135	3139 257 50311	Cover Ring VU Meter 2 (Right)	0271	3139 114 71010	Stopper Heatsink				295	D3 x 12
0136	3139 114 78271	Bracket VU Meter 2 (Right)	0347	3139 119 02241	L/R Loudspeaker Box				296	D3 x 12
0140	3139 257 50321	Button DIM	0351	2422 076 00546	Cable FM Aerial				299	D2 x 8
0141	3139 257 50331	Button PROG	0352	4822 303 50082	Antenna AM Loop				300	D3 x 12
0142	3139 257 50341	Button Clock/Timer	0353	3139 228 61801	Remote Control				301	D3 x 12
0143	3139 257 50451	Button Set Source Select	0356	2422 070 98151	⚠ Mains Cord				302	D3 x 10
0144	3139 114 77961	Lightguide Source Sel CD	0357	3139 128 73010	⚠ Adaptor Plug /21				303	D3 x 10
0145	3139 114 77971	Lightguide Source Sel TUNER	0358	4822 263 21206	Cable Cinch/1M7/Cinch				304	D3 x 12
0146	3139 114 77981	Lightguide Source Sel PC-LINK	0364	2422 076 00523	Cable USB-A/USB-B 1M5 4P				305	D3 x 12
0147	3139 114 77991	Lightguide Source Sel AUX/ GAME	0369	3139 119 00891	CD-ROM USB PC LINK Installer SW				306	D3 x 12
0148	3139 257 50351	Button Set IS/DSC/VAC	0370	3139 115 22781	Instruction For Use /21				307	D3 x 12
0154	3139 257 50381	Cover Orn WOOX	0370	3139 115 22451	Instruction For Use /22				308	D3 x 12
0155	3139 114 78101	Frame Button WOOX	0371	3139 115 22591	Instruction For Use /22 (E. Europe Language)				309	D2 x 8
0156	3139 257 50421	Lightguide WOOX 1							310	D3 x 10
0157	3139 257 50431	Lightguide WOOX 2	1104	3103 308 66991	PBAS USB PC LINK				311	D2 x 8
0158	3139 257 50441	Lightguide WOOX 3	1121	2822 031 01494	Fan 12VDC 0,8W 3100RPM				312	D3 x 12
									313	D3 x 12
									314	D3 x 12

L/R LOUDSPEAKER BOX BREAKDOWN

	9965 000 18392	Kendo Mask (L)	
	9965 000 18393	Kendo Mask (R)	
	9965 000 18394	Woofer 6,5" 6R 165W	
	9965 000 18395	Woofer Ring (L)	
	9965 000 18396	Woofer Ring (R)	
	9965 000 18397	Tweeter 2" 6R	
	9965 000 18398	Tweeter Ring	
	9965 000 18399	Woox 6,5"	
	9965 000 18400	Woox Ring	
	9965 000 18389	Rubber Foot (20 x 11 x 3 mm)	
	9965 000 18401	Rubber Foot (Dia. 15 x 1 mm)	

Note : Only the parts mentioned in this list are normal service spare parts.

SCREW LISTS - MAIN UNIT

REVISION LIST

Version 1.0 (3139 785 30350)

* Initial Release (FW-M777/22)

Version 1.1 (3139 785 30351)

* Introduction of FW-M777/21
* Page 5-9 to 5-10 : Front Control Board - Electrical parts list adapted
* Page 6-5 to 6-6 : Front Display Board - Electrical parts list adapted
* Page 8-9 to 8-10 : AF11 Board - Electrical parts list adapted
* Page 11-2 : Mechanical & Accessories parts list adapted
* Page 11-2 : Additional of L/R Loudspeaker Box Breakdown

Version 1.2 (3139 785 30352)

* Page 11-2 : Mechanical & Accessories parts list adapted